Vol. 71
No. 11

Gleanings
in Bee Culture

November
1943

Established 1873

Moving Bees for a Second Crop

By Grant D. Morse, Ph. D.

Moving Confronts the Operator with Various Problems—Many of Which Have More Than One Solution

This year at the close of the local clover flow, I moved my main yard of bees to a new location. I had moved a few colonies of bees before, but never on this scale, so the experience gave me an overview of some of the problems the beekeeper is likely to meet under such a circumstance.

The clover honey flow in this part of the Hudson Valley was not quite over on the 12th of July, but the flowers in the valley to which I planned to move were nicely in blossom, so I took off my clover honey on the 12th and moved on the 13th. I had crowded my bees a bit in the supers where they were storing clover honey so that they might cap it over a little earlier than would otherwise have been the case.

Don't let anyone tell you that a beekeeper has an insignificant or easy task in moving bees. One detail he must decide is whether he shall move them in one hive body or two. One hive body makes the work easier and lighter, but presents problems. Chief among them is the avoidance of swarming or the building of cells just prior to the moving date. I kept my bees in their customary two hive bodies, which made them heavy and bulky. I had the problem of securing hive staples to fasten them together. The bee supply houses told me they had none, so a plumber helped me out with a substitute staple used by them in fastening pipes to walls.

Using Carbolic Acid to Remove the Honey

I removed my clover honey with the aid of carbolic acid. What a boon it is to me! I remember the first time I took off a quantity of honey in excess of a ton from one beeyard without its help. I had watched another beekeeper who took off honey by removing each comb and brushing off the bees that smoke would not drive down. I did it that way. The honey flow was over. The bees did not want to share their stores with me. I was pretty much a beginner still, so you may imagine the trouble I had with angry bees. I should not care to keep bees if I had to take off honey by the brush-off method. I'll agree that care must be exercised in the use of carbolic acid for honey removal. There's always the danger of getting burned. There's always the possibility of hurting the bees, especially the queen, and how the poor drones do suffer, especially when they're caught above the excluder after Demareeing has been practiced! And, most of all, there's the fear of tainting the honey. But, so far as I've observed, all of these dangers can be avoided if care is employed. And God help the careless beekeeper anyhow! One practice that helps, as someone has said in a recent article, is to make the frame of the screen of material at least an inch thick. And keep the muslin screen taut!

As soon as I get the honey off, I stack it in neatly tiered piles and treat it with Cyanogas. That removes the few bees that cling to the combs

in spite of carbolic acid fumes. One year I tore down the piles too soon after gassing the supers and all through the extracting process we were annoyed by the nuisance stings of the crawling bees that lingered on.

The Problem of Providing Ventilation

As soon as I removed the honey this season, I tacked tight wire screens over the hive body of each colony to provide ventilation when they should be moved. After nightfall—and I mean after dark—I tucked regular fly screening into the entrances so the bees could not escape in the morning. A person doesn't realize how late in the evening bees work until he prepares them for moving. I've read of others moving bees with open entrance but I'd not care to venture it. I followed the truck in my car as they were being moved and I saw bee after bee that was clinging to the outside of the hive, in instances where not every one was shut in, rise into the air and start for home, apparently without even taking the trouble to circle. A young nucleus was left in the yard to catch all strays and it caught enough so it became obviously stronger overnight. I'd like to hear others tell in more detail of their experiences in moving without employing entrance screens.

But crowding those bees into the hive bodies after dark was not the simple routine chore it might appear to be. The night was hot; the bees had just lost their surplus; they were populous and were consequently "hanging out". In a few cases there were too many bees for the hive bodies and they simply couldn't get in. I know, because I used carbolic acid to drive them in. Smoke alone wouldn't do it, though in most cases the use of smoke in advance of the use of gas helped tremendously and was a less irritating and destructive agent. In advance I had constructed a three - sided device with which to drive them in with carbolic acid. The front of the device consisted of the usual frame and muslin sheet with an inner cover to back it up, and side walls of light board were added. This device I was able to set on the ground in front of one hive to do its work while I was tucking in the entrance screens of the other previously treated.

I found one advantage of moving to be that I could strip my colonies of every bit of surplus. What a help that is—especially here in this locality where we are never quite certain of a bountiful fall flow. I dislike the fuss and trouble of feeding. Then if a fall flow does come on, the superior honey (if such it be) is mixed with the less salable fall honey.

Does Moving Reduce Swarming?

In making plans to move my bees this summer for a second crop, one question that had been in my mind was whether it would bring on swarming. A neighbor beekeeper had told me that the moving would take all notion of swarming away from the colonies for some time. I am not positively certain that is the case. Here again, I should be interested in the observation of others. But a great amount of swarming did not take place in the new location, though the flow was abundant there.

One swarm, however, did issue on the 17th day after its arrival in the new yard. I don't know from which colony it came, but should like to know whether it was with an old queen that I had not clipped, or whether it was with a virgin. And if it was a newly-hatched queen, virgin or mated, I'd like to know whether it was from a cell that had been built prior to moving or not. Part of my interest in this detail is based, as you can guess, on wondering whether the new queen, if started before the moving date, was damaged in her cell by the shaking of the moving experience. I do know that three colonies became queenless sometime within a month after being moved. From what cause or causes I do not know. I used queen excluders in my new location, as I do customarily at home. I appreciate that many regard them as honey excluders, but I much dislike finding brood in amongst my frames of honey after it has been taken off. One rather good way, I think, is to start the season without excluders, and install them only when regarded necessary toward the close of the flow. One difficulty in doing this is to get the queen downstairs. Smoke alone very often fails to drive her down, thus necessitating a second examination after a few days have elapsed. It is true that the use of an excluder, if two hive bodies are employed as a brood nest, will lead in quite a percentage of cases to the

(Continued on page 675)

Temperature and Food Consumption of Wintering Bees

(Taken from "The Bee World" for August, 1943.)

By Annie D. Betts, Editor

The following is an attempt to put together some results of published observations which show the relation to one another of the four temperatures which largely control the behavior of wintering bees, and to point out the effects of variation in these temperatures on consumption of stores. We shall not go into questions of ventilation, and shall discuss packing only in connection with its effects on ventilation and on consumption of stores.

It may surprise readers to learn that four different temperatures are involved. We believe that this way of looking at it helps to make the problem much clearer. Like many other matters concerning bees, it is by no means completely solved, and we shall welcome for publication comments and criticisms (especially adverse ones, if there be cause for such, as is quite possible), and accounts of any observations or experience bearing on the subject. The 4 temperatures we shall consider are:

(1) The internal temperature of **the bee's body** (hereafter designated B), as given in the various experiments we shall cite.

(2) The temperature of the air **in close contact** with the bee or bees, which we shall call K.

(3) The temperature (E) of the air that is **entering** the hive and impinging on the cluster. This is the temperature which the bees feel, since it tends to raise or lower the K of the "skin bees" which form the outside of the cluster.

(4) The temperature (O) of the **outside air**, which will be lower than E, except for short periods when O is rapidly increasing.

Bees cannot keep their internal temperature B constant (as mankind does when in good health within narrow limits); it depends largely upon K, that of the air in contact with them, and is only a few degrees higher when the bee is quiescent. If she is flying or agitated, it may rise very considerably;but we are not concerned with these cases.

If one bee alone be confined in a very small space, such as a small glass tube with a cork, which will just contain her, and the tube is plunged into water held steady at various temperatures, it is found that the bee collapses from lack of air (oxygen) after a time which varies with the water temperature (Reidenbach, **Pfalz. Bztg.**, 1899; **A.f.B.**, 1, 4 and 10, 2; **B.W.**, 10, p. 145, where "58 deg." is a printer's error—see below). The present writer found (**A.f.B.**, 10, 2) that Reidenbach's results lead to the formula:

(Temperature—12.8°C.) X (Time in seconds before bee collapses)=226.5. It is clear that such a bee, when she collapses, has used up all the oxygen in the tube, and cannot therefore keep up her body heat. She must at this moment have the same temperature as the water, so that in her case B = K. A bee in a tube plunged into hot water collapses very quickly; at 15° C. in a little under 2 minutes; but at 13°C. she was still all right after three hours (when the experimenter grew tired of watching!), and on being released ran about in a quite lively condition. At temperatures under 13°C. (55°F.) this law does not any longer hold; the bee then gets cramp from cold (also, according to a mathematical law, but a different one, which does not concern us here). The importance of this is that it shows that at about 55°F. (13°C.) a bee is scarcely breathing at all. She uses so little oxygen that she can do without air for a long time. It is clear that if bees can keep their body temperature (B) at 55°F., they can economise winter stores; for a bee that is not breathing is not doing any other physiological work. She is in a sort of state of suspended animation, and therefore needs next to no food. Now, Pirsh, in America (**J. Agr. Res.** 24; 1923) investigated the relation between B and K in a number of bees (usually 100) confined in a cage at various temperatures. His results can be expressed in a formula:

$$B = \frac{6}{7} \times K + 6^\circ$$

(all temperatures in degrees Centigrade.)

Now, if we put B = 13°C. (55°F.), this gives us K= 8°C. nearly (46°F.).

XUM

This means that if a number of bees are clustered together with plenty of air to breath, their B will be 55°F. if the air close to them is at about 46°F. In other words, **bees sitting in air at 46°F. are economising effort, and therefore their stores, to the greatest possible extent.**

Now, numerous observations have proved, beyond any reasonable doubt, that when bees are clustered in winter the air close to the "skin" of the cluster is actually at or near 46°F. The air just inside the cluster, in among the "skin bees," will be nearly their B, that is, 55°F. This will be so especially, if the cluster is contracted in cold weather; if the bees are sitting more loosely, the air between them will be between 55° and 46°F. It will be recalled that bees begin to cluster at about 57°F. (the figures given range from 54° to 59°). Himmer, who has done much careful work on this subject, says that the temperature at which the cluster forms is not very clear-cut; it may be 59°F. (15°C.) or a little lower. No doubt it depends on other conditions—such as the moisture in the air and the condition of the bees. There is reason to think that bees that are full of water (that is, have fed recently on watery food) are more sensitive to cold than bees with less water content; and that bees may become acclimatised to cold and be then better able to endure it. There is also reason to think that young bees endure cold less well than older ones. All these matters may influence, perhaps, the precise temperature at which the cluster is formed.

In winter, if the outdoor temperature (O) rises to 46°F. (8°C.), the cluster is able to break up, and usually does so, particularly if it be a bright day. Anyone who watches his hives carefully in winter will have plenty of opportunity of confirming this. Why, then, do bees remain quiescent in frosty weather with the surface of the cluster at 46°, and make no attempt to fly? It is because that temperature is then only maintained by the continual production of heat inside the cluster. The air an inch or two away from the bees will be at a temperature E lower—perhaps much lower—than 46°F. The cluster is continually losing heat to the air in the hive; but the bees' automatic reactions to the critical temperature of 46° ensure that just enough heat is produced to keep the cluster surface at this point. The cluster has a method of using its heat as economically as possible; it contracts as the temperature O (and therefore E) falls. The "skin bees," feeling themselves in danger of cold-cramp, arouse from their torpor and endeavor to push inwards towards the warmer centre. In so doing they crowd closer together (much as spots on a speckled toy balloon do when it is partly deflated) and the warm air inside the cluster cannot escape so freely between them. If, in great cold, the cluster has contracted as far as it can, the bees have then no further means of economising heat, and must increase their consumption of food in order to keep the cluster surface at 46°F.

Moderate contraction also has its dangers: in spring, for example, if the cluster has to contract, it may lose contact with its stores (because the brood nest fixes its position at that season) at a time when the daily consumption is high. The moral is: See that your colonies have plenty of stores, especially in March to May.

Because of this economy of heat by contraction, bees do not consume so much stores in very cold weather as would be expected. Investigators at experimental stations in both Switzerland and U.S.A., have noticed that a good stock properly wintered does not consume much more stores in an exceptionally cold winter than in a (for the climate) mild one. Nevertheless, there is evidence that the consumption of stores does rise as the outside temperature O falls. In 1919, F. v. Kleist published some figures for the amount of stores bees use at various autumn and winter outside temperatures (**A.f.B., 1, 4**). Oeroesi-Pal rearranged these results, and obtained a curve, which was published in **Fortschritte in der Bienenwohnungsfrage,** by A. v. Matyas (1932). Starting at about 60°F., when flying and breeding are going on, the curve shows the consumption of stores at temperatures down to a little below zero Fahrenheit. The consumption drops steeply till 46°F. is reached. From this point to freezing point it is very small—the actual minimum is at 41°F. As the cold increases, the consumption rises, but much more slowly and irregularly than it fell. The particular point at which the minimum consumption comes is not important, for it will depend on the hive and its packing as

well as perhaps on the strain of bees and the condition in which the colony is (e.g., possibly on the proportion of young bees in it). The matter to note is, that **there is a certain outside temperature, which is somewhere a little below 46 F., at which consumption of stores is a minimum.**

When bees are wintered in the open, we cannot control the outside temperature; but where cellar wintering is practiced this is more or less possible. It has been found in America that the best temperature for a bee cellar varies with the locality; it is stated to be about 50° for the Eastern States, 45° for the Mississippi Valley, 40° for the Missouri Valley, and perhaps 35° for the Rockies (B.W., 14, 34). Probably in this matter there are other factors than the temperature to be considered, such as the amount of moisture in the air, which will vary with the climate.

We said above that the particular point of the outdoor temperature scale at which bees use least stores is not important. There is, however, an aspect from which it is very much so. It will depend, as has been hinted above, on the hive structure and especially on its packing (we are assuming that in every case ventilation is adequate.) In 1927 Wilson and Milum published some results on winter packing (**Agr. Exp. Sta. Univ. Wisconsin Res. Bull. 75**), and Ragner Frisch deduced a curve from their figures (**Biroekteren,** 1935). From this curve the present writer obtained the formula:

$(P + 2.09) \times (S - 12.39) = 12.52$

where P is packing in inches and S the stores consumed during the winter in lbs. This holds only for the particular colony studied, of weight about 5 lbs.; but no doubt every stock would yield a similar formula, with different values for the numerical quantities. In the particular case, however thick the packing, the stock could not have wintered on less than 12½ lbs.; and we can also conclude that the unpacked hive was the equivalent of about 2 in. of packing. Such a formula cannot, of course, be pressed too far; it would be unwise—to say the least—to try to winter bees in U.S.A. on 12 lbs. of stores, however well - packed their hive might be; and it is by no means likely that, given unlimited stores, a stock that had built combs in a bush would come through a very bad winter in a cold climate. The formula is, however, a guide to the relation we may expect packing to bear to consumption of stores. In particular, it should cause the temperature O, at which least stores are being consumed, to be lower than for an unpacked hive. It suggests that, while the ideal arrangement would be a sort of incubator hive, kept always automatically at the optimum temperature for least consumption, a good practical substitute is, so to pack the hive that this condition will be approached at the average temperature of the worst part of the winter, reducing the packing after (and if needful, before) this period. In Britain, our trouble is more often how to prevent unseasonable flying and other activity due to sunny weather in winter. Some means of cooling the hive—if it be only a large sheet of metal or wood with which to shade it—will help in such cases, especially if the entrance be darkened by boards or large slates.

BACK - LOT BEEKEEPING

This well-arranged back-lot apiary belongs to A. E. Fabian, of Lake Geneva, Wisc.

No. 1. Mr. Poulton of Poulton, Glou., turns up a straw skep super. Between the two skeps there is a supering board with central hole.

No. 2. Dumping in the driven lot onto combs in a six frame nucleus box for wintering. Two boxes are wintered on one stand, the entrance facing opposite ways.

No. 3. An apiary at Southrop settled for winter. The high walls are ideal for giving winter shelter from the gales.

From an Apiarist's Note Book

Raising Queens and Securing a Crop in England.

By A. H. Bowen

Several of the writer's out-apiaries are situated amongst fruit-tree orchards where the soil is heavy. These latter produce the famous Pershore preserving plum, small sweet pears and apples for perry and cider making, and culinary apples of many kinds. Thus the bees have a reliable source of early nectar right at hand.

Toward the end of fruit bloom, dandelion and winter beans begin to flower. Farmers now grow the latter in increasing quantity as bean flour proves itself to be excellent for stock feeding.

From first till last beans remain in bloom for several weeks. The honey from all this is amber, of good density and strong flavor.

Colonies build up quickly and begin to store from such early sources provided the weather is favorable.

It also brings on natural swarming. This is just the right condition for raising a few early queens—the value of early young queens is such that we have been experimenting with the object of getting every other colony to produce a number—not in a separate hive but on the top of the mainstock to save equipment and to take advantage of the heat. Two or three combs of brood together with food are raised into an upper story over the excluder, the vacant space below being refilled with foundation. After ten days the upper story is separated by slipping a board of 3-ply wood cleated on both sides between. This board has a wedge-shape back entrance, and a piece of metal is pushed in to make a doorstep. Next a ripe queen cell is given the queenless portion. Such cells are secured by encouraging the selected breeder to lay in new comb or comb built on plain foundation. When the eggs have turned into grubs, a series of V-cuts is made into the comb by a sharp razor blade.

Queenless bees now raise 8 to 12 fine cells along the tips of this comb or up in the cuts and there is plenty of attachment comb to be cut away.

Naturally some of the adult bees in the nucleus now separated go back but there are generally enough together with the young ones to look after the cell and the brood. It soon begins to improve. When the young queen is laying well more frames are given. When the mainstock with its double brood box and (in a favorable season) two to three supers becomes too tall to carry the nucleus longer the latter is lifted back onto an empty hive.

Then later it is placed on four bricks beside the parent colony.

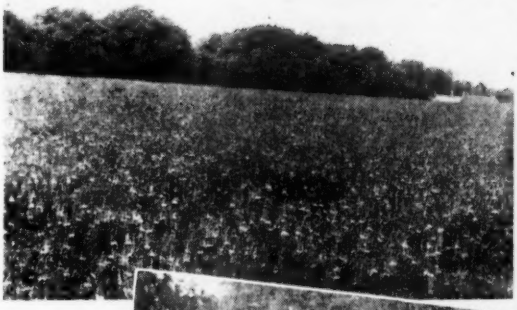
In 1942 some of our stock (without any decrease in surplus) had two such nuclei on them, and these proved to be exceedingly valuable in autumn renovation and requeening. In addition, it may be possible to winter nuclei upon stocks in order

No. 4. Putting on the bee candy. A cake of soft candy 2 to 2½ lbs. in weight will keep any stock safe and thriving. We give one once each month to all stocks.

No. 5. The Rymer brace comb preventer in use. This slatted board keeps the thin frame tops clean and free from obstruction. We leave it on all winter.

to have over-wintered queens for disposal or use in the spring time.

Last autumn we were able to secure several lots of "driven bees" from a Skeppist on the Hills. The weight for each would be about three pounds. After removing the elder queen (a swarm queen usually) we mixed two lots together and hived them upon several Jumbo size frames fitted with foundation.



No. 6. A hillside field of sainfoin in bloom. The plant which yields a most delicious honey is rapidly being plowed in and gives place to corn in wartime England.

Other lots were fed first with a slow bottle feeder, and then with a Canadian type "rapid" feeder. Both kinds built out some beautiful worker combs which were filled with brood and eggs. At this date (March) they have all wintered happily, the brood boxes being put into an outer casing to keep them snug and dry

N. 7. Making up a package lot. Finding the queen. Note the swarm on the operator's back.

and are being fed each month with a cake of soft candy. This job of bee driving which comes round every autumn is a tedious and nervous job, because you must be quiet, gentle, and skilful or you may upset the temper of all the other bees in that garden if it is a hot and robbing day. Moreover, unless every bee is taken from the skep you will have them

(Continued on page 672)

No. 8. Some of the writer's hives in a walled Cotswold garden. The bees are in Langstroth and Jumbo hives.

Let's Have Honey Fruit Cake

By Mrs. Benj. Nielsen

What? No fruit cake this year? Oh, yes! Do have at least one, even if you must halve or quarter a recipe. I know full well that ere you read these lines more of the fruits commonly used in fruit cake will again be on the rationed list. Do start now —today—to scheme and plan ahead to squeeze out a few points. And, of course, you will solve the sweetening problem by using honey. There is no happier combination than that of honey and fruits with perhaps a bit of brown sugar and nippy spices. Aged for weeks (five to six) as any self-respecting fruit cake should be, its mellow, taste-tickling goodness will richly reward any juggling of points you may have to do.

Serve scrumptious honey fruit cake with sparkling honey cranberry punch. — Photo courtesy National Biscuit Co.

Incidentally, if lack of candied fruit peels makes you hesitate to embark on a fruit cake binge that problem is easily solved. Candy your own the honey way. If you cannot buy candied pineapple try substituting candied grapefruit peel instead. Maraschino cherries, well drained, can pinch hit for the candied ones. And, by the way, tiny jars of these candied peels decked out in holiday garb make delightfully different and most acceptable Christmas gifts.

To candy these fruit peels select fresh (unwrinkled) orange, grapefruit, or lemon peels. Cut them into strips about an inch wide. Then put the strips in a pan and cover with cold water. Slowly bring to a point just below boiling. Drain. Repeat this process three times. Then make a honey syrup in the proportions of two cups of honey to one cup of water. Place honey and water in a large pan (remember that honey syrup has a tendency to foam in heating and goes over the top of the kettle in nothing flat), blend well, and boil gently for three minutes. Add to the drained peel, place over low heat and cook slowly and gently until the slices of peel have absorbed all of the honey syrup. When nearly cold, cut into thin strips. Roll in granulated sugar. If you like the spiced variety of candied peel simply add a dash of ginger, cloves, or cinnamon to the honey syrup. A few drops of almond extract also imparts a delightful flavor if you do not especially care for the spiced type.

Now do stir up at least part of a batch of honey fruit cake and when you round out a luscious slice with a cup of steaming hot honey-sweetened coffee or tantalizing honey fruit juice drink, you will have no regrets.

The recipe for this scrumptious unbaked fruit cake I gave you several years ago, but it will stand repeating now. Be sure to dry the washed fruits thoroughly—this is important—least you eat your fruit cake with a spoon!

Unbaked Honey Fruit Cake

Four tablespoons butter, ¾ cup of honey, 1 cup grape juice, 1 cup orange juice, 1½ cups of fine graham cracker crumbs, 2 cups ground rolled oats, 1½ pounds raisins, ½ pound dried currants, 1 pound dates, ¼ pound candied cherries, ¼ pound candied pineapple, ¼ pound finely sliced citron, 1 pound pecan nutmeats, 4 whole cloves, 4 allspice berries, and a 2-inch length of stick cinnamon.

Combine the fruit juices and the spices and simmer for five minutes. Strain the juice discarding the spices. Spices may be tied in a square of cheesecloth or placed in a small bag which is easily removed at the end of the simmering period. Meanwhile

grind the oats and roll the graham crackers into fine crumbs. Add to hot fruit juices and allow to cool. Then stir in butter and honey, mixing thoroughly. Let this mixture stand over night. Then wash the fruits thoroughly, spread thinly on an absorbent cloth and let stand overnight. If not thoroughly dried by this time pat dry with a clean cloth. Add finely cut nutmeats and combine with the honey fruit mixture, blending thoroughly. Press the mixture in a tube pan lined with heavy waxed paper and store in a tight container. A few days before serving examine the cake and if it seems at all dry it may be moistened by wrapping it in a cloth wrung out of grape juice. Delicious—and so easy to make.

Here are some fruit cake varieties not too hard on points and pocketbook— especially when you consider their rich health giving minerals and vitamins.

Honey Applesauce Fruit Cake

One-fourth pound honey candied lemon peel, ¼ pound honey candied orange peel, ¼ pound citron, 1 pound raisins, 4 cups sifted flour, 2 teaspoons cinnamon, 2 teaspoons cloves, 2 teaspoons nutmeg, 1 teaspoon soda, 1 teaspoon salt, 1 cup butter (or ½ cup butter and ½ cup vegetable shortening) one cup brown sugar, 1 cup honey, and 2½ cups of thick (well drained) applesauce, unsweetened.

Run fruit peels and raisins through the food chopper using the coarse knife. Sift together flour, spices, soda, and salt. Cream together butter, brown sugar, and honey, Add fruits, stir in dry ingredients; then the applesauce; mix thoroughly. Line a tube cake pan with heavy waxed paper, pour in batter and bake in a slow oven, 300 to 325 degrees F., about 1½ hours. Let cool and store in air tight container.

Economy Honey Fruit Cake

Two - thirds cup shortening, one-half of which may be butter, 1 cup honey, 1 cup sugar, 2 eggs, 3½ cups sifted flour, 1½ teaspoons soda, 1 teaspoon salt, 1 teaspoon cloves, 2 teaspoons cinnamon, ½ teaspoon nutmeg, 1 cup strong coffee, 1 cup raisins, and 1 cup currants.

Cream softened shortening with honey and sugar, beating until light and fluffy. Stir in eggs beaten until very light. Sift flour, measure, and sift with soda, salt, and spices three times. Add to the creamed mixture alternately with the coffee. Then stir in raisins and currants. Pour the batter into two loaf cake pans lined with heavy waxed paper. Bake in a slow oven, 300 degrees F., about 1 hour. This should be kept about five weeks before even thinking of snitching a sample.

Honey Cranberry Punch

Three-fourths to 1 cup honey (depending on your sweet tooth), 1½ cups lemon juice, 1 cup orange juice, 2 cups cranberry juice, 6 cups water, and ice.

Combine honey and juices blending thoroughly. Add water. When ready to serve, pour over finely cracked ice. Garnish with lemon slices if desired.

Layered Honey Applesauce Fruit Cake

One cup shortening, 2 cups brown sugar, 1 cup honey, 2⅓ cups thick unsweetened applesauce, 6 tablespoons lemon juice, 4 eggs, well beaten, 1 cup Kellogg's All-Bran, 4 cups sifted flour, 4 teaspoons baking soda, 1¾ teaspoons salt, 3 teaspoons cinnamon, 2 teaspoons nutmeg, 1 teaspoon cloves, 1 teaspoon mace, 1 teaspoon allspice, 2 pounds seeded raisins, ½ cup whole wheat flour for driedging raisins, ¼ pound citron, thinly sliced, and 1 cup nutmeats, broken.

Cream shortening, brown sugar, and honey, add the applesauce which has been sieved to remove all lumps, eggs, and lemon juice. Blend thoroughly. Stir in All-Bran. Sift flour, measure, and sift with soda, salt, and spices. Dredge raisins with the whole wheat flour. Add flour mixture to batter gradually. Add dredged raisins. Put a layer of the batter into a waxed paper lined baking pan. Add a layer of citron and nutmeats, cover with a layer of the batter. Repeat, having the top layer of the batter. Bake in a slow oven, 300-325 degrees F., about two hours.

If you really would like to splurge a bit try the following:

One and ¼ cups of brown sugar, ½ pound shortening, 1¼ cups flour, ½ cup honey, ½ cup molasses, ½ pound citron, finely sliced, ½ pound figs, chopped, juice of 2 oranges, 1½ pounds of dried currants, 2 pounds raisins, ½ cup plum jelly, (other tart jelly may be substituted) ½ cup honey candied orange and lemon peel, ½

(Continued on page 672)

A Beginner Repeats

By Leonard O. Dansby

The other evening I was looking through some back issues of Gleanings when it occurred to me (helped along by my wife) that the wives of beekeepers deserve mention for their courage, patience, and other qualities brought out by the manipulation of bees by the beginner. I shall take the subjects as listed:

First shall be courage. The first manifestation of courage on the part of my wife came on the day a three-pound package of very aggravated bees arrived at my home. Before I reached them, my wife had patiently followed the method of feeding them sugar syrup through the screen. This went very well except there was screen on the other side and the ant colony under the back steps attended the ensuing banquet in full.

The bees installed, the household returned to normal. The location of my apiary being on the roof of my garage, puts the bees to a search to find water. They found it quite successfully the day my wife hung out the wash. Several hundred of the bees walked around on the wet laundry taking their fill. The gathering of the laundry was a minor colony manipulation in itself.

The next step requiring intestinal fortitude was the removing of bees from the kitchen where they flew due to the attraction of light. The screen door has a half inch crack at the bottom. The bees entered and industriously buzzed around the lamp. Removal accomplished by trapping them in a small section of cloth and removed.

The next sterling quality is patience. Patience is an utmost requisite when the amateur comes tramping into the house loaded down with veil, smoker, hive tool, possibly hive parts, and other paraphernalia necesssary to the manipulation. The smoker is usually left standing in the most convenient spot on entry of the house; bee veil and hive tool left standing on the sink. Perhaps some of my readers are the desire of a woman's life—the "return-things-to-their-proper-places" type. However, I feel that most of us are addicted to complete and utter carelessness around the home.

Sugar rationing and feeding of my colonies. A great many pies and cakes and other confections went into the feeder while my wife stood patiently by and made only one comment—"No honey next summer and we buy a can of insecticide".

My colonies saved themselves from premature extinction from insecticide by producing a wholesome crop.

The first extraction presented a minor problem. The relatives were over for dinner. The usual mentioning of bees had passed when there were made some slurring remarks about the ability of my colonies. Taking the challenge to heart, I grabbed smoker and veil and dashed off to extract a comb of honey.

I opened the hive successfully and then removed a large extracting frame full of honey — and covered with bees. At this time my smoker ceased to work—it's sudden stopping due to its falling from the garage to the ground.

Determination did not desert me. I took the comb over to the edge of the garage and surveyed it thoughtfully. The brushing theory presented itself. Taking the bee-brush firmly in hand, I proceeded to brush the somewhat agitated creatures from the comb. They did not want to leave. However, I finally mastered the case and got them dropped (combless) in front of the hive.

I started to re-assemble the hive. I placed the inner cover and then lifted up the cover. My ankle suddenly felt as if a dozen or so firebugs were building a blaze in my sock. I couldn't drop the cover and I couldn't brush the bee away. I replaced the cover and grinned— convincingly, I hope, at the onlookers— and then thoroughly squashed the offender.

My wife stood by patiently. She disdains the use of veil and has never been stung. She can manipulate a hive with no more trouble than scrambling an egg. I often feel ashamed of myself when I go out to the stands armed with smoker, veil, and feeling of pride in my daring.

My wife patiently watches me take the honey from the frame. Since I do not have an extractor, I decided to convert it into chunk honey and supply each of the guests with a piece

(Continued on page 672)

From the Field of Experience

MOVING BEES UNSCREENED

By Cary W. Hartman

I believe I am safe in saying that more bees are moved open in California than closed. However, beekeepers are about equally divided on the question. We have moved open for seven years. We load just after the bees go in at night, and try to reach the new location at 3 to 5 A. M., wrap up in our blankets and sleep till 6 or 7 A. M., then get up, have our breakfast, and unload the bees. Fewer bees are out of the hives than if they were closed in.

We do not stop on the road at night. If the trip is too long for the gas we have in the tank we carry an extra tank.

When loading, one man uses the smoker puffing two or three puffs of smoke in the entrance, two men carry the two-story hives to the truck, and one man places them. We load a truck of 50 colonies in 30 minutes.

Oakland, Calif.

• • •

OBSERVATIONS OF AN AMATEUR

By C. O. A. Kramer

"Uneasy lies the head" of the amateur beekeeper. He must learn by hard experience, and from books and other bee literature, the principles underlying the spirit of the hive. But, as Dr. C. C. Miller once said, "He has a lot of fun." Yes, he has a lot of fun and, I believe, if he is observant, he obtains a better idea of beekeeping, or rather the fundamentals that actuate the spirit of the hive, than does the professional beekeeper, who, of necessity works on a mass production basis.

Let me describe briefly some of the things with which we amateurs have to contend. There is the top entrance, for example. The idea propounded in some of the magazines seemed logical and, if I remember rightly, a ⅜-inch hole was to be bored in the regular hand hole. This seemed to work out pretty well except, that when it became necessary to shift some of the hive bodies around, and one grasped the hand grips, some vigilant guard took exception and let you have the sting in the tip of one of your fingers. Now I see several illustrations in the July issue of Gleanings showing the ⅜-inch hole bored **above** or **below** the hand grip, which would enable one to plug it very nicely and thus avoid the stings above mentioned.

Another piece of advice frequently given in books and other bee literature pertains to drawing out foundation. "Always place foundation above the brood chamber and, in a honey flow, it will be nicely drawn out." Well, quite often it isn't. I have placed some above the brood chamber during a good honey flow and found later that the bees simply removed certain sections between the wires producing a result similar to a "crazy-patch" quilt. On the other hand, frames fitted with full sheets of foundation were placed two or three supers away from the brood chamber and were nicely drawn out from top to bottom.

The usual advice accompanying package bees is to place about six drawn-out combs in the hive, remove the feeder can and queen cage, and place the package in the open space where the four frames would ordinarily be located. Then a week later, remove the empty package and insert the four additional frames. Quite often, when examining the hive a few weeks later I find that the bees have very nicely removed all of the cells adjoining the sides of the hive body leaving only the imprint of the original foundation. However, by placing nine frames in the brood chamber instead of ten I find that they utilize all nine frames fully but they do build a few brace bars from the combs to the sidewalls of the hive.

There are a number of books written for beginners, one of which has a fairly wide circulation, where, on the very first page, is this sage advice: "Get your package bees about the 25th of April. If you cannot get them then, better not start until next year." I believe that this bright piece of advice has discouraged more beginners than anything else. I have made swarms with queens purchased in August and had them built up in good shape for winter, becoming my best producers the following year. Of course, as producers of surplus for the current year the results were nil. My query is, why not tell the be-

XUM

ginner that he can build up a swarm as late as July, in many cases, that will be self-supporting throughout the fall and winter, and have them ready for the following year for surplus production at that time. If I had received package bees on April 25th this year it would have been necessary to feed them until about the 10th of June.

Then there is the question of where to buy your bees. Dr. Miller says, "Buy the best queen you can get." I turn to the pages of the bee journals and I find bees from the South, East, West and North—golden queens, leather-colored queens, queens bred for resistance to this and that, hustlers, teachers, and whatnot. Of course, I realize that no magazine can come right out and say, "Jones has the world's finest queens" because Smith and a hundred advertisers will feel mighty hurt about it. Perhaps we amateurs should organize a secret lodge of some kind and tell only our lodge brothers this mighty important secret.

Yes, we amateurs have a "lot of fun" and I believe that the hour or two that we are able to spend with our little apiaries teaches us concentration, humility, and the fact that the Almighty is ever present in all His works.

River Forest, Illinois.

• • •

HONEY GOING TO WASTE IN ALBERTA

When I arrived in Alberta in 1939 the industry was relatively undeveloped. Do not suppose, however, I am taking any credit for its growth. There are still millions of pounds of honey going to waste annually in this province. The following figures may be of interest:

	Bee-keepers	No. col.	Prod. per hive	Total prod.	Average price to producer
1939	1,590	18,000	121 lbs.	2,178,000	8.0
1940	2,200	22,000	101 lbs.	2,222,000	11.0
1941	2,400	24,000	130 lbs.	3,120,000	12.0
1942	3,800	27,500	91 lbs.	2,500,000	14.5
1943	7,000	35,000	110 lbs.	3,850,000	14.5

1943 figures are, as yet, only an estimate.

There are a number of problems that seem odd. One of them involves the package bee industry. We annually import about 80% of our packages. We have a tremendous number of swarms from these packages, many of which are supersedure swarms. Wintering is relatively simple if the moisture accumulation is prevented.

You might be interested in an observation I made on a colony that was due to be killed in the fall. The queen was destroyed in August in order that there be no brood at the time of killing the bees. The bees were not killed by the beekeeper. He thought he would freeze them to death by removing the entrance block and placing the hive cover corner-wise on top. They did not freeze though it was a colony of average strength only and the temperature for one three-week period never rose above 40 below zero (minus 40 degrees Fah.) and went as low as 62 below zero.

We can readily winter bees in Alberta on 40 or 50 pounds of feed with the same packing used in warmer places, but we have to be extremely careful to prevent condensation in the hive.

One other factor in regard to wintering that seems of prime importance is the strain of bees on which there seems to be a tremendous variation in their ability, not perhaps so much in pulling through the winter but in their ability to stage a come-back in the spring.—W. G. Le Maistre, Provincial Apiarist, Edmonton, Alberta.

• • •

ONE MAN'S OPINION
On Proper Management

A phase frequently seen in the more recent bee literature is "proper management".

While we all agree that proper management is probably the keystone of success in many undertakings, the big question is, "What is proper management".

We will read in one article that if you give bees the proper management in the fall, they will not need any attention in the spring. Also, proper management in the spring will make certain the building of a big force of field bees that are ready right to the hour to take advantage of a sudden flow of nectar. Proper management will give us perfect combs, perfect queens, perfect beekeeping.

November seems to me to be an appropriate time to speak of this. Beekeepers who pack are probably through with their work. Those who don't are beginning to get the uncomfortable feeling that maybe they should. In any event, the physical work in the bee yard is finished for most of us, and the time is here again

for reflection and meditation on the best way to improve our lot during next year, and the years to come.

When we try to learn just what proper management is, we run into such a diverse and contradictory opinion that many of us are bewildered. So, let's see if we can untangle the mess.

To me, proper management is a combination of knowledge and experience that is welded by appropriate action into a set of circumstances that will provide the results desired.

It can be accidental. Take the experiences of many beginners. They know nothing about bees. They get a start by following sound instructions to the letter, and fare very well indeed. They practice sound management without knowing why they are performing the manipulations, because their instructions are written to cover their circumstances. Other beginners follow instructions just as faithfully, yet they do not get good results because the bees don't do what the books say that they should do.

The first set, if they are human, will begin to improve upon their instructions. The second set, if they are not licked by the apparent inconsistencies of their experience with the theory that they are following, will also begin to experiment. The first lot then will have failures, the second, successes. Eventually, assuming that they stick to it, they will become wise in the way of the bee, they will develop their own routine, and 99% of them will become average good beekeepers. The 1% will become exceptionally good beekeepers because they get to be masters of the important part of beekeeping.

So, let's end the active season of 1943 with a little reflection on proper management. I think that since so many different systems seem to work equally well, that the unwritten, unspoken, and generally unthought-of ingredient is the matter of timing. In other words, while most of us know what is the right thing to do, the reason that we have failures is because we are too lazy to do the right thing at the right time, or because we do the right thing at the wrong time, or vice versa.

Imagine the satisfaction we all would have if, at the end of the season, we could say to ourselves truthfully, that we did exactly the right thing at exactly the right time. And it would be more than just satisfaction, because the chances are that it would be accompanied by a comfortable feeling as we look at the bank balance, or better yet, the war bonds that the bees have presented to us.

How are we to know what is the right thing to do at the right time?

That, my friend, is "proper management".

• • •

CAT BIRD KILLS BEES

By L. E. Shaner

Recently I have noticed the wood thrush and the cat birds eating bees. The wood thrush picks the bees off the ground or the ledge in front of the hive. The cat bird is sly. He will sneak up by the hive, make a jump, and catch a bee on the wing as it approaches the hive. They must consume a large number of bees in a day.

Youngstown, Ohio.

• • •

SECOND GLANCES

By C. M. Isaacson

Cellar wintering of bees is a subject discussed infrequently of late—hence it is of real interest to read Mr. Wright's article (page 579). Wintering in a **well constructed** cellar does have advantages: less stores are consumed (a strong point in these times of high prices), and the severest storms and cold spells may come without causing anxiety. The construction of Mr. Hamilton's cellar seems to be a result of definite planning to meet his particular conditions (something all of us should do with every beekeeping problem). The large amount of ventilation is good—many will remember "hot" cellar experiences along towards spring. And the heavy ceiling insulation gives protection against too sudden changes in temperature. His main conclusion, that a **dry,** fairly cool cellar is more important than its temperature alone, ties in with facts brought out in study of outdoor wintering as well. The article will repay a careful reading.

Working for wax alone would be unprofitable and undesirable for the majority of beekeepers, but B. Alfonso's report contains much of interest and value to adapt to production of the extra wax badly needed now—the fact that bees start work more readily in a completely empty frame, and the rapidity with which wax was produced in the brood chamber are two. And his closing

statement—that each beekeeper must learn to form his methods to fit his particular conditions—is a truism too often disregarded (page 580).

Beekeeping is a disease—but a fascinating (and not too deadly!) one, as Mr. Dansby and countless others have discovered (page 582). That first package of bees! The first honey "of your own"! I share his feelings vividly. And, incidentally, other beginners would do well to emulate him in reading up their subject thoroughly before launching into actual practice. Here is to many successful seasons ahead, Mr. Dansby—more power to you!

"Scientific Breeding of Bees" (page 584). The average apiarist is not in a position to engage in laboratory research in beekeeping (but can play an important part in field experiments). Articles of this type show how complex the various factors involved are, but at the same time give facts in such a fashion as to make their reading of decided value to anyone interested in this phase. That color is an inherited racial characteristic makes it easier to keep strains pure and fix a desirable factor—but varying results obtained in crossing different strains and colors make it clear that much additional work will be needed before anything is definitely established. We should always bear in mind here, that work of this kind does not always show immediate results—but that its real value in all lines has been so clearly shown that we need more and more of it.

Damage to sweet clover is a serious matter to a large section of commercial beekeeping in the Central states. The various experiment stations and Universities are working hard on this problem of the sweet clover weevil, however, and already there is promise of remedial measures. The best seems to be the plowing under of infected areas in the early summer. Here again the practical value of research work combined with experiment is evident. (page 587).

Winter protection of bees is a matter varying considerably with local conditions and individual preference. The very clear pictures and explanatory text (pages 590-91) show one method that appears both speedy and efficient. The cases are expensive originally and would be cumbersome to transport—a reason why many with only semi-permanent locations prefer a cheaper pack, such as tarred paper and straw. But as Mr. Coggshall points out, results over a period of years do talk—and his results have been good.

The "processing" of honey is discussed clearly and thoroughly in Dr. Eckert's article (page 592). That there are many different procedures that might come under this term makes a simple application of the OPA order difficult. As he points out, it is unfair to the producer going to extra effort to produce a fine honey, that he cannot benefit under this ruling. Perhaps this will be remedied.

Careless use of poison dust is a serious damage not only to the beekeeper, but indirectly to all agriculture (see editorial, page 610—importance of the bee to the country as a whole). Education as to the harm done is the long-time remedy; a stricter control of the actual dusting an immediate one (page 594).

Robbers will always be out **early** in the morning ("One Man's Opinion," page 597)—they were out earlier than that small colony had "awakened". Result—chaos.

There is considerable information needed by every beekeeper in that "question and answer" release from the Food Administration. Study it carefully. (page 621).

More magazines every month are giving honey valuable publicity. This is not accidental. Support the American Honey Institute—every dollar contributed will return manyfold.

Middle River, Minn.

"Foulbrood!—Great heavens, I thought it was my feet!"

From North, East, West and South

SOUTHERN CALIFORNIA, Oct. 3

Weather: The days are warm to hot and nights comfortably cool. No rain of consequence has fallen since our last letter.

Honey Crop: Usually the crop is in cans by now, but a few beekeepers, some of them large producers, finding it impossible to secure help are now finishing canning their honey. The yield is very irregular. One beekeeper told of moving bees 15 miles inland to a very promising black sage range. Visiting them a few days later nectar was coming in at a great rate. The following day he returned and put on plenty of supers. Returning a week later he found supers as dry as when he put them on.

Market: Demand for honey at ceiling price continues. Most beekeepers have sold part or all of their crop feeling that the present ceiling price is likely to remain. Beeswax is in demand at 41½ to 43½c.

Miscellaneous: Most beekeepers are maintaining their number of colonies. Some few expect to catch swarms to replace losses but the majority use the division method. Disease is well under control and most beekeepers are leaving their colonies heavy with stores, so that everything should be ready to go with a bang in 1944.

Some of the old timers not only leave their colonies heavy with stores for winter but save supers of heavy combs of honey.

Honey has been brought from South Dakota and Nebraska to California. Honey produced in California was taken to eastern states. Somebody pays the carrier. The margin between the ceiling price to the beekeeper and the ceiling price to the consumer is such that the middle men can move honey several thousands of miles and still make a profit. California can consume all the honey we can produce and more. It looks as if somebody is getting the cream and it is not the fellow who sweats over the beehive at 100 degrees in the shade and often no shade.—L. L. Andrews, Corona, Calif.

NORTHERN CALIFORNIA, Oct. 5

Weather: The weather has been ideal for honey. If we could have had such weather through our eucalyptus flow we could have had a crop to boast about. Taking the weather as it came we have a crop of 60 pounds to the colony. Commercial beekeepers moved their bees and have at least one more crop.

In the mountains there have been showers but not enough to break the drouth. There is no prospect of rain at this date. Here in the Bay area for the past two weeks eucalyptus has commenced blooming, furnishing both pollen and nectar. The bees were quick to profit by it. The prospect for a eucalyptus crop in 1944 is good. It can be turned to failure by heavy rains during the flow. This season promises an early crop as far south as the territory goes.

Condition of bees is good. There are spots where airplane dusting has destroyed many colonies. If this danger cannot be controlled our losses in the future are bound to be greater.

Bees are going into winter quarters in a little better condition than usual. In the past, beekeepers of this area have had winter losses because of extracting too closely at the end of an early honey flow.

Honey Crop: Extracting is about over and the honey is in the can. We can draw a good estimate of our crop for 1943. The general report is good. Taking into consideration everything, good and bad, the average production is not far from 50 pounds to the colony.

Market: Buyers are plentiful. Honey is scarce. Beekeepers tell us they are booking orders for honey every day. Buyers tell us they cannot find honey but are hoping that a little later there will be enough offered to meet their demands till another crop comes.

Beeswax: Dr. Eckert of the University of California has made an earnest effort throughout the entire season to encourage beekeepers to produce and save more wax. At the

beginning of the season he told us that we could save 3 pounds from each colony. Few of us believed it could be done. The beekeepers of California have unwavering faith in Dr. Eckert's judgment and followed his direction and now at the end of the season are pleased with the results. They find they have saved much more wax than in previous years.—Cary W. Hartman, Oakland, Calif.

• • •

TEXAS, September 30

Weather: The weather throughout September was very much to the liking of bees. After two months of drought, the rains commenced and the plants of this semi-arid section started to bloom in a few days. The result was that the bees could fly every day and bring in a sufficient amount to take care of their very rapidly expanding brood nest. The weights of two hives located in considerably distant spots from each other showed the same weight on the last day of the month. These hives contained very little brood, one, brood in patches on three sides of combs, and the other, on four sides. At the end of the month, as nearly as can be told by observation, the worker forces consisted of nearly three-fourths young bees and the colony seemingly is about three-fourths stronger than it was at the beginning. At the same time, the weight of the colonies indicates that the amount of nectar coming in during this period of time offsets the amount used in the rearing of field forces. During the same period the bees removed considerable honey from the lower hive body and stored it above, so that at the present time they have quite large brood nests well filled with eggs and young brood, and a second hive body completely filled with sealed honey. It is rarely we find bees sealing honey here in September.

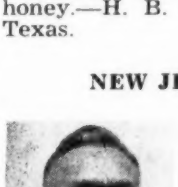
Crop Conditions: The bulk of the honey gathered during the month came from white brush. It is to be remembered that white brush is one of these desert plants that bloom shortly after every rain and if there is but one rain, white brush goes out of bloom in about three days. In this way the beekeeper generally gets but little help from the brush. During this month, light rains fell often and some of this white brush has been in full bloom for nearly three weeks.

Miscellaneous: The publicity given to the demand for beeswax and honey has brought about quite a peculiar situation. As a rule, beekeepers this time of year are quite busy in hunting a market for honey, but this year their honey is all gone or spoken for, and they are now just as busily engaged in their search for combs that can be used for beeswax and in cleaning up the bee yards and honey houses to secure any wax that is no longer useful to the beekeeper. While bee supplies are not easily purchased, the beekeeper is a little worried as a majority of those with large apiaries always have on hand remainders of old purchases and hives that can be torn apart and used in the repairing of damaged ones.

There is a huge crop of candidates for the beekeeping profession among people who know nothing of the trade with the exception of what they have read in papers and seen in picture shows. Among these, it is hoped that there are some who will become real beekeepers and also a number who, becoming interested in beekeeping, will become producers of honey.—H. B. Parks, San Antonio, Texas.

• • •

NEW JERSEY, Oct. 9



Weather: Last spring the weather started off with high cold winds and below normal temperatures. As a result bees were unable to replenish their all too low stores. Plants promised a good honey crop but bees were unable to take full advantage of the offering since they were not able to build up to full strength in time to gather it.

Since spring it has been abnormally dry and alsike clover, which normally produces much of the surplus honey in South Jersey, dried up. When sumac (**Rhus glabra**) came on the dryness hurried the blossoms so the crop was not up to expectation from that source.

With dry weather continuing prospects for honey from clover in 1944 are very poor.

Not for several years has there been such a stand of aster (**Aster ericoides**) as this year. Many fields are white from it and bees are packing the hives to repletion with honey from this source.

Miscellaneous: Where beekeepers have not requeened the bees have superseded queens to the extent of at least 75%. This together with the aster stores should make for good wintering since the young queens will lay late and the winter colony should be made up largely of young bees. There is no trouble in this state from aster stores.

Honey: The demand for honey is more or less a scramble with producers rather apathetic about selling. This is due to the OPA scale of prices set for the producer-packer.

New Jersey is a honey-importing state and at least 90% of the crop harvested in the state is sold within a few miles of the production point.

The crop is packed and sold by the producer at a price which has been satisfactory to both the producer and the customer.

The OPA schedule of prices which the producer-packer may charge retail allows 28c for a pound jar while honey in pound jars packed by large packers is selling locally at 35c. New Jersey producers fail to see justice in such a deal.

Then the scale of prices allows $1.11 for a five - pound container while a three-pound container can be sold legally for 75c. Under this schedule it is readily seen that the producer-packer will lose 2c a pound when he sells in five - pound containers. The result will be no honey packed in fives.—Elmer G. Carr, Pennington, N. J.

• • •

COLORADO, Oct. 6

Weather: We have just completed a warm dry, Colorado September, with the best honey flow from rabbit bush and aster that we have had in five years. This condition was made possible as much by good rains we had in August as by the above mentioned warm weather. At this time the soil is dry, too dry, but there is yet time for it to be soaked up before the freezes come.

Condition of Bees: Bees have filled up for winter better this year than for many seasons. We have had no fall feeding to do, and should have little, if any, to do next spring.

For the second straight season our two-year-old queens have failed to supersede to any extent. We just do not seem to be able to get fall requeening done.

The Crop: Crop results have been quite spotted. Furthermore, they were not at all predictable. The failure to get a crop in most cases was due to a shortage of field bees when the flow came. Those who fed during the adverse weather of May and early June, or moved to a location where some nectar was available, have been well repaid for their efforts. But in some cases where the bees were in fair condition no crop to speak of was secured, and what was gathered was dark and of poor flavor. We, ourselves, have no complaint, averaging better than two cans per colony. Yet we know that had we made brood-rearing conditions more ideal during the early months, our crop would have been even better, for we were in one of the areas favored with a good long flow.

Miscellaneous: If friend Hartman doesn't have places confused in his October article, that cotton poison must have done some handsome drifting. The whole state of Kansas and most of Oklahoma are between Nebraska and any cotton fields worth dusting. (Those are my old stomping grounds, Cary). The dusting problem is a serious one as is the problem of all poison insecticides used in a wholesale manner. The education of the users to the possible loss of bee life, and consequent loss to agriculture will be as effective in the elimination of this trouble as all the laws we can get passed. Not that we do not need laws. But the law alone without justification in the eyes of the poison user is apt to be of little value.

With the crop all extracted and in most cases sold, many Western Colorado beekeepers are getting ready for the annual "sashay" into the haunts of elk, deer, and bear. Big game hunting is more than a sport this year,—it is wonderful how many red points one well placed "soft-point" will save. To all gun totin' beekeepers everywhere, our wish, "Good hunting".—John W. Holzberlein, Jr., Grand Valley, Colo.

KANSAS, Oct. 9

Weather: In most parts of the state, June was a month of over-abundant rainfall. In many places there was at least twice the amount of normal rainfall and, in the northeast region, there was little or no sunshine. In other parts of the state there was sufficient sunshine to enable the bees to fly. July was dry. August also was dry, with temperatures ranging up to 112°F. in the central part of the state during the first three weeks. September also was dry but slightly below normal in temperature. Rains during the latter part of September and early October came too late to be of benefit for a good fall honey flow.

Conditions of Bees: In the central part of the state a light honey flow occurred from alfalfa during August. In September, in the central region, there was also a light honey flow from alfalfa and smartweed, but not of sufficient strength to produce surplus honey. There was no honey flow during the late summer and early fall in the northeastern portion of the state.

Honey Crop: In northeast Kansas the honey crop amounts to only 50% of normal. In other portions of the state a normal or slightly better than a normal crop was obtained. The quality of this honey is of high grade. In the eastern part of the state the source of the honey was principally from clovers. One beekeeper, early last July, obtained a clear, deep red colored honey from buttonbush, which grows profusely in the wet area of the sand dune region of the central Arkansas River Valley. This honey is mild and of pleasing flavor in spite of its dark color.

Market: The honey produced has already moved into the trade channels or has been sold directly to the consumer. In all cases the demand for honey is good. Several beekeepers have sold their crop and are endeavoring to buy honey to supply the demand.

Miscellaneous: The Kansas State Fair, at Hutchinson, had an excellent honey exhibit. The public expressed a keen interest in honey.

Orders for queens and package bees should be placed early, during November or December. Many producers, being short of help, will be able to supply the demand. Some producers are booked full for 1944. —R. L. Parker, Manhattan, Kans.

• • •

ONTARIO, October 5

Weather: Last night we had our first hard frost. No honey of any account is ever brought in here after Sept. 1. For the past three weeks we have had extremely dry weather and rain is needed badly. Buckwheat yields proved very disappointing at most of our locations as the last ten days of August were cool.

Crop Conditions: The buckwheat crop was good in Victoria County. Buckwheat always yields more nectar at our Victoria County location than it does here in York County.

Miscellaneous: Clover prospects are not so good here as they were a year ago, but it is too early to make any prophecies concerning prospects for a crop in 1944. Feeding, where required, is being done at present and the weather is favorable for this work. While we will use most of our packing cases for wintering as in the past, we will, however, try a number of two-story colonies with no packing except a paper wrapping, and with lower entrances nearly closed.

In the middle of the front end of the upper story a ⅝-inch hole will be provided as a winter entrance. Contrary to our expectations, colonies wintered that way last winter under trying conditions as to extreme cold and no snow protection, came through in very good shape and built up well this spring. We have hundreds of packing cases getting old and shaky after many years' use, and if we can winter without packing cases, we naturally do not feel like going to the expense of making new ones.

Following the rationing order that restricted the buying of honey to one pound per month for each person, honey did not move very fast in the stores or from the producers. Coupon "D" serves a number of commodities as well as honey, and as this coupon would buy ½ pound of sugar if preferred, many took sugar instead of honey. Popular reaction to this drastic ruling as to honey caused the

W. P. T. B. to revise this regulation and today the "D" coupon entitles the holder to buy one pound for each coupon instead of half a pound. That simply means that each person can buy two pounds of honey each month instead of one pound. Merchants tell me that honey is now moving.

One of the strange things connected with the marketing of honey this year is that grade or color seems to make little difference when dealers are trying to buy. Our buckwheat honey sold at the same price as white honey in a wholesale way. This, of course, is a sure indication of an expected dearth of supplies, and many dealers believe that nearly all honey will be used up early in 1944.—J. L. Byer, Markham, Ontario.

Just News

Believe it or not, the scale hive in The Root Company's home apiary has gained 24 pounds during the last 10 days. This is Oct. 14. The flow is still on from aster. Not so bad for this time of year.—Jack Deyell.

• • •

The Michigan Beekeepers' Association will hold its annual business meeting on Wednesday, Dec. 8, 1943, at Michigan State College, East Lansing, Mich. The meeting, starting at 10 A. M., will include election of officers, as well as discussions of vital problems facing the industry. Beekeepers are urged to attend. The Association has well over 500 straight memberships this year, an increase of 200 members over last year.—Elmer Carroll, Publicity.

• • •

The New Rochelle Beekeepers' Association will hold its regular monthly meeting at the home of Mr. and Mrs. George Leys, 48 Drake Avenue, New Rochelle, N. Y., on Sunday, November 21, 1943, at 2:30 P. M. Movies taken by our host will be shown. Refreshments will be served following the meeting.— S. Barnes, Publicity.

• • •

The Montana State Beekeepers' Association will meet at Bozeman, Montana, on Nov. 5th and 6th, for the annual meeting and election of officers.—Willard A. Bell, Pres.

• • •

The Illinois State Beekeepers' Association will hold their 53rd Annual Convention on November 12 and 13, at the St. Nicholas Hotel, Springfield, Ills. Many out-of-state beekeepers will speak.

• • •

The Iowa Beekeepers' Association will hold its annual meeting in Ames, on November 18 and 19. A program of the meeting may be obtained by writing to F. B. Paddock, Secretary, Ames, Iowa.

A national meeting of the bee and honey industry is scheduled for Jan. 11 to 13 at Morrison Hotel, Chicago.

• • •

The Middlesex County Beekeepers' Association will rendezvous for a supper meeting at 19 Everett St., Concord, Massachusetts on Saturday, November 27, at 7 P. M. In accordance with its annual custom the club will give away a Christmas turkey as a door prize. We are hoping to have Mr. Tilson from Mansfield as speaker for this occasion. Our five summer meetings have all been enjoyable and educational, blessed with good weather and generous hospitality for which we take this opportunity to thank our cordial, charming hosts and helpful members.—A. M. Southwick, Pres.

• • •

October 8, 1943,—Mr. Walter F. Straub, of Chicago, founder and president of the W. F. Straub Co., food product and pharmaceutical manufacturers, was appointed today by Chester Bowles, general manager of the Office of Price Administration, as Director of OPA's Food Rationing Division. Walter Straub succeeds Harold B. Rowe, who was transferred last month to the Office of Economic Warfare. Appointment of Mr. Straub brings to the head of the nation's food rationing program a man of broad experience in the food industry. The new director of the Food Rationing Division is also a large producer of honey and a member of that industry's War Food Administration Advisory Committee. Mr. Straub, who assumed his new duties yesterday, is married and has three children. He was born in Chicago in 1897 and is a graduate of the University of Illinois, in chemistry.—Office of War Information, Office of Price Administration.

XUM

Editorials

The reduced size of this issue of Gleanings is in compliance with a War Production Board order to conserve on paper.

• • •

Don't harbor disease, especially during winter months. Some beekeepers think that a colony with only a few cells of AFB will survive the winter. Don't take a chance. Dispose of the diseased colony or colonies promptly and properly—**now.**

• • •

Be sure to reserve ample stores — honey and pollen — for bees for winter and early spring food requirements, also supply adequate protection against the cold, especially in the North. Bees will be needed next season, perhaps more than ever before, to pollinate fruit, vegetable, and clover blossoms to help the food production program; also to salvage a portion of the millions of pounds of nectar that goes to waste annually for the lack of bees to gather it.

• • •

Sugar for bees is available to beekeepers who live in regions where nectar has been scarce and where bees do not have enough honey for winter food. A beekeeper requiring granulated sugar for his bees should register as an industrial user of sugar, at his local Rationing Board, and make out an application for sugar on Form R-315. Fifteen pounds are allowed for each hive of bees requiring sugar syrup. By all means, secure the necessary sugar to prevent loss of bees. Two parts of sugar should be stirred into one part of hot water until granules are dissolved. Feed the warm syrup in a bee feeder or a friction-top can with cover having a dozen small holes made in it with a 3-penny nail. The pail of warm syrup is placed cover down, over the top bars or the frames, or over the hole in the inner cover. An empty super should be placed under the outer hive cover to protect the can.

• • •

The upper entrance, or auxiliary flight hole as some call it, has been used by some beekeepers for many years. We have used it in the Root Company apiaries for about fifteen years. The bottom or main entrance is reduced down to about 4" x ⅜" during winter, to exclude mice. This upper entrance is a ⅝" auger hole (a hole slightly larger would do no harm), bored just below the handhold in the upper brood chamber, sometimes called the food chamber. The thing we like about this upper entrance, or flight hole, is that it permits bees to fly out easily on warm days. The hole is practically adjacent to the winter cluster. If the hole were not there bees would have to travel down through the bottom of the hive, where the air is colder, to get out. We call this hole a safety valve, because it facilitates winter flights and helps to expell excess moisture.

• • •

Aster What a boon to beekeeping this plant proves to be, especially when other late summer and fall plants fail. Aster, the last honey plant for the season in many areas of the North, yields best, as a rule, after a light frost. Aster honey is not considered good winter bee food. However, if warm weather follows a late aster flow, permitting the bees to drive off excess moisture from the nectar, colonies will winter quite well on aster honey.

On the other hand, should cold weather follow a late aster flow, preventing bees from ripening the honey properly, dysentery is likely to occur, especially during protracted cold spells of winter which prevent frequent bee flights.

In many areas aster is more plentiful than usual this fall due to increased acreage of waste land. Aster may be a life saver for hundreds of colonies this fall.

• • •

Viscosity and Thixotropy The thickness, or slowness, in the flowing of honey, is usually called "body". A thick honey of good body is referred to as having a high viscosity. Viscosity in honey is very markedly affected by temperature. Honey becomes thinner when it is warmed. Honey mixes more readily when its viscosity is low, so warm honey blends more readily than cold honey.

When honey is warmed the greatest decrease in viscosity takes place between room temperature and 100° F. Above 120° F. the decrease in viscosity with increase of tempera-

ture is very small. Thus no appreciable advantage is gained by warming above this temperature for blending. Lower temperatures may be used effectively.

In Europe there is produced a honey from heather of such high viscosity that it will not run out of a bottle when inverted. The honey also exhibits another peculiar property known as thixotropy. By this is meant that the honey will change its viscosity merely by agitation. Substances that show this behavior are referred to as "thixotropic".

This property is frequently exhibited by colloidal substances, so that the behavior of heather honey in this respect is due to the presence of some colloidal substance.

Heather honey must be agitated in order to remove it from the comb by centrifuging. While no honey in this country exhibits this phenomenom to the same extent as heather, it has been found that buckwheat honey and certain other types are thixotropic to some extent.

• • •

Section Comb Honey and Chunk Honey It is generally understood that comb honey produced and sold in wood sections is not subject to regulation MPR-275, and has no price ceiling.

Chunk honey (which is a piece of comb containing honey broken or cut out of an extracting frame or section) if put into a jar of extracted honey, does not change the identity of extracted honey and is subject to MPR-275.

However, chunk honey wrapped in cellophane or moisture-proof paper is an unprocessed commodity similar to section comb honey, is not subject to regulation MPR-275, and is exempt from price control.

• • •

Vitamins in Honey There has been much discussion about the vitamin content of honey. Many of the earlier workers reported the absence of vitamin A, B, C, D, and E in honey. This is not surprising since many foods relatively low in vitamins are given a similar rating because the then available methods did not detect small quantities of the vitamins. With the present improved procedures the vitamin content of any food material can be estimated with considerable accuracy. Extensive studies on the B vitamin content of honey have recently been made by Kitzes, Schuette, and Elvehjem (J. Nutr. 26, Sept., 1943).

What is the practical significance of these results? In the first place it is obvious, as you would expect, that honey is not a rich source of any of the vitamins. In other words, we cannot rely upon honey to supply extra amounts of vitamins in diets already low in these factors. However, it is also clear that honey is not devoid of vitamins which means that when honey is consumed we do not have to rely upon the other foods in the diet to supply all the vitamins needed for the metabolism of the sugar ingested from the honey. Since many of the B vitamins are used in the metabolism of sugar we can calculate what part of the total requirement honey supplies by assuming that 100 grams of honey yields 300 calories or 1/10 of the total energy requirement for an adult of average activity. The minimum thiamine requirement for 300 calories is 0.1 mg. and the average amount of thiamine in 100 grams of honey is .004 mg. or honey supplies 1/25 of the thiamine necessary for the calories in this amount of honey. The minimum riboflavin requirement for 300 calories is .2 of a mg. and 100 grams of honey contains on the average .026 mg., or honey supplies about ⅛ of the amount needed. The minimum nicotinic acid requirement for 300 calories is 1 mg. and 100 grams of honey contains 1/10 mg. of the needed amount. Similar calculations cannot be made for pantothenic acid, pyridoxine, and biotin because the human requirements are not known but significant amounts of each of these vitamins are present in honey.

If we make this calculation for vitamin C we find that 100 grams of honey supplies the total amount of this vitamin needed for a caloric intake of 300 calories.

Like most foods high in sugar, honey is low in thiamine but fairly well supplied with riboflavin and nicotinic acid. Another point which needs to be taken into consideration is that the above calculations are based on the average vitamin content. If the higher values are taken, and it should be possible to produce honey with this higher content by proper precautions, then honey would supply 1/10 of the thiamine, ⅓ of the riboflavin, and ½ of the nicotinic acid needed to metabolize the energy ingested with a unit amount of honey.

XUM

American Honey Institute News Notes

Commercial State Bank Bldg., Madison, Wisc.

Members of the American Honey Institute have responded wholeheartedly to the request that they assist us to close the American Honey Institute books for the year 1943 on December 31. This means that before February 1st the Annual Directory should be in your hands.

• • •

The Institute has recently added a a few more Sustaining Members. To become a Sustaining Member the contribution must be $50 or more. California and Minnesota have each added a Sustaining Member to the American Honey Institute during the past month.

• • •

A letter from the State of Washington says, "I did my entire canning with honey this year. I put about a half inch in a quart jar and packed it with fruit—solid. It needed about ½ to 1 cup of water. It was then cold packed. It is grand. I put up 500 quarts."

• • •

Royal Jelly has an exceedingly high pantothenic acid and biotin content.

• • •

Have you a picture of a dream apiary—the kind you've always wanted and will some day have? Right now it is out of the picture, but when the war is over we'll have help to make our dream apiary come true. Right now is the time for us to start post-war planning.

• • •

During this season of the year try apples and honey on your upside-down cake.

• • •

General Mills' War Time Services for the Home Front lists Broiled and Boiled Honey Icings and Honey Glazed Carrots.

• • •

Extracts from letters received at the Institute Office:

"I am sure I have increased the sale of honey tremendously since I have used your leaflets."—Maryland.

"That 'Chocolate Honey Cake' in your honey recipe book proved to be a 'Honey' ".— Wisconsin.

"Enclosed please find a dollar bill for which send me as many of the attached folders as you can. If same are no longer available send anything similar. I find them the best little honey-selling helps I have ever used. I put one in every package and also hand them out to prospective customers. You might also include a few samples of other available material of the same nature".—Illinois.

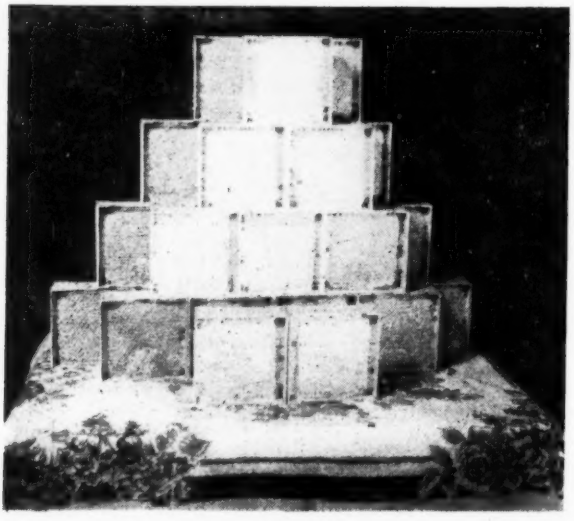


EXHIBIT HONEY

Twenty-five No. 1 sections from one super. Produced and photographed by C. G. Langley, Red Wing, Minnesota.

Asked and Answered

Auger Hole in Top Hive

Question.—Having in mind the advantage of an upper entrance to emit moisture from the interior of an outdoor wintered bee hive and not desiring to allow the bees to use an upper entrance at all, would a ½ or ⅝ inch auger hole in the top hive, screened to prevent the bees from using it, answer the above demands?—James O. Ashbaugh, N. Y.

Answer.—Concerning the upper entrance consisting of a ⅝" auger hole in the middle of the top chamber, we leave this open during the winter and consider it an advantage because bees that need a flight badly can easily get out of the hive through this small hole. Otherwise they would have to go down through the bottom of the hive where it is cold, to reach the main entrance. This hole in the upper chamber is practically adjacent to the cluster of bees. We have used this type of upper entrance for almost 20 years and like it. It helps to expel moisture from the hive during the winter months. If you wish to plug up this hole in the spring, after the bees start flying, all well and good. You can use a cork or a wooden plug of some kind.

Rendering a Small Amount of Old Combs

Question.—How can I get the wax out of a few old combs and bits of burr comb?—Joe Riley, Indiana.

Answer.—To get most of the wax from old combs and pieces of burr comb without using a wax rendering machine, the pieces of comb should be placed in a burlap or salt sack. After tying the mouth of the sack, it should be placed in a boiler of water which should be brought to a boil and kept boiling for about an hour. The sack should be weighted to the bottom of the boiler. Take a stick with a flat or rounded end and punch the sack occasionally to agitate the old combs. The liquid wax, being lighter than water, will rise to the surface. The foreign matter and cocoons in the combs will be retained in the sack. When the water is allowed to cool, the cake of wax may be lifted from the surface of the water.

Escaping Bees from Supers

Question.—I have three or four full-depth supers of honey on one colony. Can I trap all of the supers off at one time with the bee escape or would you take half of them first?—Hans Loetz, Michigan.

Answer.—You had better escape not more than two old supers at one time. We have escaped three supers at one time but the bees are sometimes rather slow in leaving them.

Bees in Trees—Do They Swarm?

Question.—Do bees in trees swarm just like bees in hives?—T. H. Mettler, N. J.

Answer.—Yes, colonies of bees in trees swarm the same as colonies of bees in hives. If they didn't honeybees would not have been propagated during the past centuries. Bee trees and crevices of rocks are natural habitats for honeybees. During a season favorable for honey, colonies in their natural home or habitats become crowded or congested. Swarms issue, the old bees and the old queens leaving, to establish new homes with the young bees and the young queens left to carry on. This is the opposite of what occurs in the human family. In the case of a large family of humans, the old folks will usually remain in the original home, while the young folks establish new homes of their own.

Requeening with Ripe Queen Cells

Question.—I requeened about ten colonies with ripe (capped) queen cells and most of these were not accepted and the bees seemed to lose a lot of time trying to raise a queen. I would like to know why they did not accept the cells. I killed the old queen and waited about 24 hours before giving the cells. Would cell protectors have helped?—Ruel W. Driver, Va.

Answer.—It is reasonably simple to requeen colonies of bees with ripe queen cells, provided conditions are right for requeening. There should be a honey flow on at the time cells are introduced. If little or no honey is coming in it would certainly pay to use cell protectors to prevent bees from gnawing the cells. It seems that due to possible erratic weather conditions it is impossible to use any cut and dried method for requeening. If one could be sure of normal weather conditions, all would go well. When conditions are abnormal, this makes a difference in the acceptance of queens or cells.

Information on Pollen Supplements

Question.—Where can I obtain detailed information on collecting and mixing pollen with soy bean flour to feed bees, as a substitute for pollen?—Robert Parker, Ia.

Answer.—Send to U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine, Washington, D. C., for Circular E-531, "Use of Pollen Traps and Pollen Supplements in Developing Honeybee Colonies", by C. W. Schaefer and C. L. Farrar. The price is 5 cents.

Spinster Jane Says

Being confined to a hospital bed for weeks is surely an ordeal, especially so when one has always been strong and well, but perhaps it may have been one of those "blessings in disguise", after all. It taught me a great deal about the goodness of my neighbors, of those whom perhaps I had been at times unkindly critical. Now I wonder if this will remain a warning lesson to me.

It was a strange thing that got me home much sooner than I had thought possible. A fire, no less! A chimney burning out caused the hospital roof to catch on fire. Then began the exodus from the upper wards, all quietly and orderly, no excitement or fright evident. Down we went, some on stretchers, some being helped along, one lone baby in its cozy basket. I could almost know what a rescue at sea might mean. Those nurses and doctors showed the same quiet and cheerfulness in the face of danger.

We were packed into a lower ward and only in time to escape the deluge when the water was turned on. What a soaking that hospital got as the water poured through the ceilings and down the stairs! Of course the fire was soon out, and the problem was, where were the patients to be put? Everything was damp, if not soaking wet. There was even danger of the ceilings giving way, so soaked they were. "How would you like to go home," the doctor asked, and in the short time it took to telephone, my heart fairly sang. Then home, home at last, and in all the wide world there was no place so welcomed by anyone.

Perhaps I missed a good many stings by being away from home during honey harvest, because never before had bees been so vicious. It wasn't safe to hang clothes on the line, to bring a pail of water from the well, or to gather any vegetables from the garden. Those bees were as stirred up as women sometimes are at a bargain sale, when someone grabs an article all are reaching for. Perhaps we women would be ugly too, if Nazi-like, some one looted all the food we had gathered and stored for winter, especially if we had so many to feed and protect. The horses were attacked 40 rods away from the bee-house, bees getting underneath their manes and almost driving them crazy. They attacked the man pitching off the load, here at the barn. When one or two came, he fought them off, but, not satisfied, they came by the dozen. The pitcher covered himself with hay until he thought all would be gone, but no such luck, so he hiked for the bee-house and the extra bee-veil. Then the load was at last pitched off. Unlike the F.B.I. and many noted detectives, the bees spot the man higher up at once, and not some accessory who leads them to that leader.

Boy surely had a lot of trouble over all the containers that had been parked with him long before the bees even thought of bringing in nectar. Working as he does, with his long shift coming only once in three weeks, he was able to extract only about a day or two at a time. Those who came to get their honey supply early, fared well, but the majority put it off until honey was rationed and oh! what a to-do! They had ordered their honey ahead, and were entitled to it! Why should they have to give coupons? Oh yes, Boy was adamant, or they would have coaxed him into operating a Black Market. They thought only of themselves and their need of some sweet to take the place of the sugar they could not get.

The amount per coupon has been increased to one pound, but no beekeeper wants to be bothered using such small containers, with its attendant work and muss. He will leave this to the store-keepers, and we truly think they are the ones who caused honey to be rationed. When they saw people from a distance going off with fifty pounds of honey, while they could procure none, well, they began to complain. Right now they pay 12½ cents per pound, though they do not sell it that cheaply. Boy has had offers for his entire crop from outside, distant, wholesalers, so what has become of southern Ontario's honey crop? They say honey isn't to be found on the shelves of many of our largest cities' stores. We have had requests from Windsor, Hamilton, and Toronto, and we away up here in this unpromising bee district!

This year, Boy plans all outside

wintering. He will use what winter cases he has, then will wrap the rest of his hives in tar paper. We are of the opinion that bees do not require much heat, and we fully agree with that gentleman writing from Saskatchewan. With humans, those living in houses so open that they can lie in bed and count the stars through openings in the roof, are likely to be far hardier than are those whose homes are too warmly heated by furnaces. Heat is pleasant, but too much of it lessens our resistance to disease, especially to colds. —Spinster Jane.

THE 1943 HONEY CROP IN CANADA

Dominion Bureau of Statistics Agricultural Branch, Ottawa, Canada

Press Release, September 29, 1943

The 1943 honey crop is tentatively estimated by the Dominion Bureau of Statistics at 32.5 million pounds. This first estimate is based on reports as of September 15 furnished by provincial apiarists and marketing organizations and is subject to revision when data on extracting operations are complete. The 1943 crop was one of the best on record. It exceeded the 1942 crop of 24.1 million pounds by 8.4 millions or 35 per cent and the 10-year (1932-'41) average production of 27.3 millions by 19%. Although there was a slight decline in the number of producing colonies this year the average yield was 78 pounds per colony as compared with only 56 pounds in 1942 and the long-term average yield of 70 pounds. About 28 million pounds, or 87 per cent of the crop was light honey.

One-third of the total Canadian crop was produced in Ontario where production is estimated at 12 million pounds as compared with the short crop of 7.8 million pounds in the year previous. Production in the Prairie Provinces totalled about 14 million pounds, which is considerably in excess of the 10.6 million pounds produced in 1942. A good crop of approximately 5 million pounds of honey was extracted in Quebec. Production in British Columbia was estimated at 1.3 million pounds, which is slightly less than the amount produced in 1942. Production in the Maritime Provinces was also less than in the previous year.

About 50 per cent of the crop had already been marketed when retail sales of honey were suspended by government order prior to the introduction of coupon rationing of this commodity effective September 2. Prior to that date the greater proportion of sales had been made direct to the consumer with very little honey moving through normal trade channels.

Production in 1934 to 1943

1934	27,063,000	lbs.
1935	26,815,000	lbs.
1936	31,938,000	lbs.
1937	23,197,000	lbs.
1938	37,910,000	lbs.
1939	28,873,000	lbs.
1940	23,671,000	lbs.
1941	27,472,000	lbs.
1942	24,086,000	lbs.
1943*	32,520,000	lbs.

*Preliminary.

NEW JERSEY ASSOCIATION SPONSORS RADIO PROGRAM

By S. H. Wilcox

The New Jersey Beekeepers' Association has been conducting a weekly radio program over radio station WTTM, Trenton, New Jersey, since April, 1943. The time of these broadcasts is at 5:30 P. M. on each Monday and all beekeepers in New Jersey are requested to tune in.

The program is conducted on alternate weeks by Mr. Milton H. Striker, President, and Mr. Elmer G. Carr, Secretary, of the New Jersey Beekeepers' Association. These two men put considerable effort into the preparation of interesting programs and among their guest stars are many well-known entomologists, agriculturists, and beekeepers.

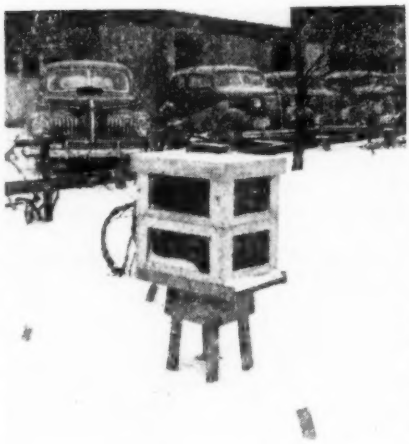
The programs are designed primarily for beekeepers and cover a wide variety of subjects. However, judging from the large number of letters received from non-beekeepers, these programs have been responsible for stimulating the interest of the general public in bees and honey uses.

Field meetings have had to be curtailed due to limitations placed on travel but the weekly radio program has acted as a weekly get-together between the Association and its many members.

The weekly radio program idea is suggested to other state or county associations as a means of educating the public to the many uses of honey and as a means of stimulating interest in beekeeping in their areas.

Somerville, N. J.

Talks to Beekeepers



By M. J. Deyell

An Open - air Colony

We have heard of colonies, or swarms of bees, going through the winter clustered on branches of trees. This happens more often where the winters are not too severe. We have wondered just how much cold bees will stand.

Last winter we fixed up a strong colony of bees in a two - story hive, in the home apiary, the upper story practically filled with honey, together with some honey in the lower chamber. The sides and ends were cut out of the hive, as will be seen from the accompanying picture. The hive had a bottom, top and four corners.

The colony was transferred into this hive on October 29. The hive was placed on a stand about 2-½ feet from the ground to prevent mice from entering. Wires were attached to each corner, then to stakes in the ground, to keep the hive from blowing over.

Strange as it may seem, on cold days the cluster seemed to prefer the North end of the hive. Quite often during temperatures around zero the bees would extend somewhat beyond the end-bars of the frames. During a warm day, the bees had no trouble finding an entrance to fly out, in fact, they could fly in all directions.

The hive had a glass inner cover containing two wooden strips with small holes that would admit mercurial thermometers about ¼ inch in diameter. It was possible to insert a thermometer through the wooden strip, down between the combs into the middle of the cluster of bees. At one time when the mercury out-of-doors stood a little above zero, the temperature in about the middle of the cluster was 80° Fahrenheit.

During November and December, the bees looked and acted normal. During early January, something abnormal was occurring, because the bees appeared restless and some showed signs of dysentery. I surmised that the bees in the middle of the cluster had run short on stores because the cluster had almost reached the top - bars of the frames.

On January 16, all of the bees had died. Some of them had fallen to the bottom board while others were clustered between the combs. When I removed the combs, I found just what I expected to see; the bees in the center of the cluster with their heads in the cells. The bees on the outer edge of the cluster were in contact with some honey but apparently they were not able, because of the obstruction caused by the combs, to pass this honey to the bees on the inside of the cluster.

We are going to try this experiment again this winter and we will make sure this time to have a superabundance of honey in the hive so that the bees will not starve before spring. We will let you know later how the experiment turns out.

Dr. C. L. Farrar, Bee Culture Laboratory, Madison, Wisconsin, has wintered a colony in his locality in a hive similar to the one shown. (See page 515, Sept. 1943, Gleanings). Not only did the colony survive the winter but the amount of surplus it stored the following season exceeded the average per colony crop for the state of Wisconsin.

A Honey Flow in October

This is quite unusual, especially in this locality. From October 4 to 14, our scale hive in the home apiary gained about 24 pounds. As a matter of fact, this is the only honey flow of any consequence that occurred in our region this season. It pays to keep supers on until the very close of the season.

Extra Queens in Nuclei

This past season we used some nuclei mating boxes consisting of 10-frame hives with a tight fitting division board in the middle and an entrance at each end, such as our queen breeder, Mel Pritchard, used

(Continued on page 675)

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cts. per counted word. each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding

HONEY FOR SALE

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED pure aster honey. Send prices. Robert W. Lane, Greeneville, Tenn.

WE PAY CASH for extracted clover honey. Fair-Field Honey Company, Millersport, Ohio.

HONEY WANTED—State kind, quality, amount. Ellsworth Meineke, Arlington Heights, Ill.

WANTED—White and amber honey; any amount. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED TO BUY, comb, chunk, and extracted honey, any amount. Lose Bros., 206 E. Jefferson, Louisville, Ky.

CEILING price paid for Michigan clover honey, in sixty-pound cans. TOWNSEND SALES COMPANY, E. D. Townsend, Northstar, Michigan.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

WANTED—White or light amber extracted honey, truck lots to a carload. Send samples with price offered. Bee-Kist Products Co., San Antonio, Texas.

WANTED—White clover and light amber honey. Any amount. Cash at time of delivery. Clover Blossom Honey Co., 975 Berkley Road, Columbus, Ohio.

WANTED—We pay cash top price for clover honey in 60-lb. tins. Any quantity. Send samples and best prices. Cloverdale Apiaries, F. M. Babcock, Fredonia, N. Y.

HONEY WANTED—All Grades and Varieties. Highest Cash Price Paid. Mail Sample. State Quantity. HAMILTON & COMPANY, 1360 Produce Street, Los Angeles, Calif.

WANTED white or light amber extracted honey from 1000 lbs. to a carload. Cash waiting. Send samples and best price to Honeymoon Products Co., 39 E. Henry St., River Rouge, Mich.

WANTED--Honey and beeswax. Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

HONEY AND WAX WANTED. All grades. Any quantity. Send samples and your best cash price. We carry large stock of Tin and Glass honey containers. ALEXANDER COMPANY, 819 Reynolds Rd., TOLEDO, OHIO.

FOR SALE

QUEEN-BEE PAINTING outfits, $1.00; hive cards, 10-15c, postpaid. Southwick Apiaries, Waban, Massachusetts.

FOR SALE—1700 5-gallon square cans, used once, 40c per case of two. Lose Bros. 206 E. Jefferson, Louisville 2, Ky.

YOUR WAX worked into quality medium brood foundation for 16c a lb.; 100 lbs., $12.00. Fred Peterson, Alden, Iowa.

FOR SALE—180 comb honey supers for 10-frame hive. Guaranteed no disease. Clarence Engle, Kearneysville, W. Va.

COMB FOUNDATION at money-saving prices. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

FOR GOODNESS SAKE smoke your own hams and bacon. Directions for pickling and smoking, $1.00. Very old New England recipe. Cecil Shepard, Rochester. N. H.

Pleasing three color Cellophane Window Comb Honey Cartons, $1.00 per 100; $4.50 per 500; $8.50 per 1000; weight 25 lbs. per 500. A. G. Woodman Co., Grand Rapids 4. Mich.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

SAVE MONEY by letting us work your wax into wired regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices as we have no agents. Walter T. Kelley Co., Paducah, Kentucky.

FOR SALE—1000 wooden cases containing two 5-gal. used cans in perfect condition, at 40c a case. Wanted: Comb and extracted honey. Highest prices paid. New England's Largest Honey Packers since 1920. Bizzy Bee Ranch, No. Arlington. Mass.

BEES AND QUEENS FOR SALE

CAUCASIANS — Untested queens, 75c each. Safe arrival. Prompt shipment. Lewis & Tillery Bee Co., Greenville, Ala.

HoneyProducers:

FROM PRESENT INDICATIONS there will be a big demand for PACKAGE BEES next year.

Already we have had several requesting that their orders be booked for 1944. At this time we have not arranged prices, but will try to have them released by Dec. 1st. In the meantime we will be glad to file your order subject to your approval when the price is released.

We are working to have additional colonies and queen-rearing equipment as well as supplies to handle the much increased volume of business we anticipate.

Delivering your order on time and of quality PACKAGE BEES is our business. You can help us by giving us an early estimate of your needs and the date desired. You are under no obligations in doing this and it will be of great value in making arrangements for spring delivery.

"THEY SATISFY"

Do we have your name and present address?

Rossman & Long

Box 133 **Moultrie, Ga.**

New York Beekeepers

The field is full of honey buyers It's definitely a seller's market and a chance to get out of debt and build for the future. Do some serious thinking now. Tomorrow may be too late. Buyers will be critical then. Seek a permanent outlet which you yourself control. See what a Cooperative can do to build for post war market. It's equipped to do a big job. We need millions of pounds of honey to do it. The bonded warehouse assures a cash advance on delivery. It's your opportunity. The time is right. Ask for further information.

Finger Lakes Honey Producers Cooperative, Inc.

Groton, New York

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bias or prejudice. "The forum for the thoughtful" One year $1.00; two years, $1.50; sample copy, 3c stamp.

With Gleanings it provides a combination that covers the beekeeping field.

Both magazines for one year, $1.75

BEEKEEPERS ITEM

P. O. Box 687 San Antonio, Texas

CHOICE young laying Italian queens by return mail, $1.00 each. White Pine Bee Farms, Rockton, Pa.

NO WINTERED QUEENS TO SELL. Spring Queens ready in April, 1944. D. W. HOWELL, Shellman, Georgia.

PACKAGE BEES and queens. Italian stock. Dependable service. Circular. Crenshaw County Apiaries, Rutledge, Ala.

IMPROVED ITALIAN queens, 75c; from a strain that produced over 600 lbs. of honey per colony. Henry Loehr, Caldwell, Tex.

PACKAGE BEES AND QUEENS. 3-band Italians, prompt service and satisfaction. Unt. queens, 65c each. Tested queens, $1.30 each. 3 lb. pkg. with queen, $3.65. John A. Norman, Ramer, Ala.

THREE-BANDED Italian queens for 1944; select queens, 90c each. Booking orders for spring delivery now. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, N. C.

WANTED

WANTED two or three frame extractor. Ralph Morris, R. F. D. No. 1, Poughkeepsie, N. Y.

WANTED — Good condition 45 - frame Simplicity extractor. Arthur Brady, Winter Park, Fla.

WANTED to buy factory-made used 10-frame empty hives. For sale, regular shallow frames, .02 each; beeway holders, .03 each; separators, free. John Sueper, Webster City, Iowa.

WANTED to buy, bee outfit in connection with small farm, preferably poultry farm. State price and full particulars in first letter. Use Transpacific Airmail. Hawaiian Honey Co., P. O. Box 21, Waipahu, T. H.

HELP WANTED

WANTED—Man with beekeeping experience for year-round work with deferment possible. Arthur J. Schultz, Ripon, Wis.

MARRIED MAN with some experience with bee work; year-round work; modern house furnished. Elton L. Lane & Son, Trumansburg, N. Y.

WANTED—Experienced man, married or single, in queen, package, and honey production. Year around work. Give full particulars when replying. Al Winn, Rt. 1, Petaluma, Calif.

TRAPPERS

TRAP FOX AND COYOTE on bare ground or deep snow. Learn modern methods and outwit the sly furbearers. Free illustrated circular. F. Q. Bunch, Welch, Minn.

MAGAZINES

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, P. O. Box 43, Cleveland, Johannesburg, S. Africa.

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including a subscription to the paper 10/6. The Apis Club. L. Illingsworth. The Way's End, Foxton, Royston, Herts, England.

ALL THE NEWS of Poultry! Marketing, discoveries, breeding, feeding, laying. Subscribe now! One year 25c; 5 years, $1.00. Poultry Tribune, Dept. 149, Mount Morris, Illinois.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7s. 6d., International Money Order. Apply Editor, Indian Bee Journal, Jeolikote, Dist. Nainital, U. P., India.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association, one year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.60. Wallingford Building, Winnipeg, Canada.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto, 2, Ontario.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription, $1.50. Hotel Cactus, San Angelo, Texas.

MAGAZINES—Business, Vocational, Diversion. Current single copies. Choose from 569 different publications covering Advertising, Aviation, Beverage, Confectionery, Electrical, Food, Horticulture, Medical, Music, Photography, Pottery, Poultry, Radio, Refrigeration, Printing, Vegetable Growing, Watchmaking and more than 150 other fields. List with prices free. Commercial Engraving Publishing Company, 34M North Ritter, Indianapolis 1, Indiana.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

CASH BUYERS OF HONEY
Carload or Less
B-Z-B Honey Company
Alhambra, Calif.
(Los Angeles County)

HONEY WANTED
Carloads and less, all grades.
Will pay top prices.
Would contract now for crop.
Also Beeswax.
H. & S. HONEY & WAX COMPANY, Inc.
265 Greenwich Street, New York, N. Y.

BUY U. S. WAR BONDS AND STAMPS

MUTH has the "HEN'S TEETH"

You have heard how scarce hen's teeth are, so are some important bee supplies. Look these over and order NOW. Stock limited and subject to being sold.

225—10 fr. 1 story Metal Telescope Cover Hives with inner covers, split bottom bar frames, heavy galvanize covers (pre-war make) in lots of 5		$14.75
1500—10 fr. ALL WIRE (wood bound) Queen Excluders	each	.85
lots of 5 or more		.80
2000—2 Way Bee Escapes	each	.12
200—Smokers 3½ x 7	each	.90

Complete line of wooden ware supplies. Due to the shortage of lumber caused by war demands and shortage of manpower in the lumber industry we urge—we warn you—get your 1944 supplies NOW. Send for price list.

Glassware—Shortage caused by corrugated containers. A good stock on hand.

16 oz. jars with caps, packed 24 to case	$1.00 per case
32 oz. jars with caps, packed 12 to case	.90 per case
5 lb. jars with caps, packed 6 to case	.55 per case

(Immediate shipment available)

HONEY—We pay the highest O.P.A. price for your honey 12c per pound f.o.b. your station for good table honey. Write us for containers. Remittance the day your shipment is received.

BEESWAX—41½c per pound cash—43½c per pound in trade. We pay the freight on 100 lb. lots or more. We render old comb.

MUTH—85 YEARS IN THE HONEY BUSINESS

THE FRED W. MUTH COMPANY

229 Walnut Street **Cincinnati (2), Ohio**

SELL US YOUR HONEY NOW AND SAFEGUARD YOUR FUTURE SALES

• Here is an opportunity to establish permanent connections with one of America's largest honey merchants. Sell us your honey now, all of it, in carload lots. (Smaller amounts accepted from nearby points.) We pay top ceiling prices. We also want your beeswax. For this we pay $.41½ for clean, pure, yellow wax. All prices effective at shipping points. Send your samples at once. Cans returned in accordance with OPA order No. 275, if desired.

THE JOHN G. PATON COMPANY, INC.
630 Fifth Avenue, New York, N. Y.

The SITUATION

During the past season and at the present time, our stocks of Wooden Goods, Bee Comb Foundation, Smokers and some other items have been ample. The demand for glass containers has been excessive, but we have been able to care for all orders to date. It is well to anticipate your requirements in view of the labor shortages.

A. G. WOODMAN CO., Grand Rapids 4, Mich.

The Hubbard APIARIES

WRITE FOR FREE CATALOG

Quality Bee Supplies Factory Store Prices
Prompt Shipment from Stock
Satisfaction Guaranteed

THE HUBBARD APIARIES

Manufacturers of Bee Supplies

ONSTED, MICHIGAN

2 Years $1.50

American Bee Journal—monthly: published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey.

—SAMPLE COPY FREE

$1.00 a year. 2 years $1.50 in U. S. and Canada. Combined with Gleanings in Bee Culture, both magazines, ONE YEAR, $1.75. This offer good only in the United States.

Address—

American Bee Journal, Hamilton, Ill.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933, OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, FOR OCTOBER 1, 1943.

State of Ohio, County of Medina, ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared E. R. Root, who, having been duly sworn according to law, deposes and says that he is the Editor of the Gleaning in Bee Culture, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post office address—

Publisher, The A. I. Root Co., Medina, O.

Editors, E. R. Root and M. J. Deyell, Medina, Ohio.

Business Manager, M. J. Deyell, Medina, O.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The A. I. Root Co., Medina, Ohio; Capt. Donald L. Demuth, New York City; Kate Gunkleman, Rt. 4, Medina, Ohio; J. T. Calvert, Medina, Ohio; H. H. Root, Trustee A. I. Root Estate, Medina, Ohio; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; R. I. Bostwick, Box 242, Vicksburg, Miss.; Alan I. Root, Medina, Ohio; Trustees Profit Sharing Fund, Medina, Ohio.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securites than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily publications only.)

E. R. ROOT, Editor.

Sworn to and subscribed before me this 2nd day of October, 1943.

HAROLD C. WEST, Notary Public.

(My commission expires March 27, 1946.)

SUNNY SOUTH APIARIES

Bunkie, Louisiana

(Formerly Marksville, La.)

Proprietor, I. Clark

• • •

500 2-story hives, Italian bees, in standard equipment. Good combs, with extractor, and honey tank complete.

• • •

Bees free from disease.

Priced reasonably.

Write for details.

CARNIOLANS
CAUCASIANS

Many, many thanks to our many customers the past season. Sorry that at times we could not take care of all orders. Planning to do better in the season of 1944.

Albert G. Hann, Glen Gardner, N. J.

MOUNTAIN GRAY BEES

Sold out for all this year and until May 1st, 1944. We genuinely appreciate the business you have sent us this year and the confidence you still have in our ability to send you good bees.

BOLLING BEE CO.
Bolling, Ala.

THE BEEKEEPERS MAGAZINE
$1.00 a Year

Is the new rapidly growing bee journal. Established 1938. It is now one of the three leading beekeeping publications.
Single copy current issue, 10c.
Combined with Gleanings in Bee Culture, it makes the Perfect Pair. Both magazines, one year, $1.75.
THE BEEKEEPERS MAGAZINE
3110 Piper Rd. Rt. 5, Lansing, Mich.

WANTED

First class queen breeder. Year round or seasonal. Top salary for A-1 man. Must be capable of producing.

Quality and Quantity

The Puett Company

Hahira, Ga.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the

"Australasian Beekeeper"

Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to the Editor. P. O. Box 20. West Maitland New South Wales Australia

FROM AN APIARISTS' NOTE BOOK

(Continued from page 647)

crawling over the cottage floor when carried indoors and this will earn the beeman a bad name.

It is necessary to drive out the mother bee as well as her children, otherwise the latter will disperse (instead of settling down) and enter other hives.

Occasionally she will not leave the skep till last of all and has to be hustled out with a feather. This is what we do if we can't see her—lower the top skep into which the bees have been run over the under one and wrap a cloth round to exclude light. In about ten minutes the queen— and it is generally a young and valuable one that plays this trick—will have run above to join her daughters.

Cheltenham Spa, England.

LET'S HAVE HONEY FRUIT CAKE

(Continued from page 649)

pound nutmeats, mixed, 6 eggs, 1 teaspoon soda, ½ teaspoon each of cinnamon, nutmeg and cloves, ½ teaspoon salt, and ½ cup additional flour for dredging the fruits.

Cream the shortening and add the sugar gradually. Beat until light; then add beaten egg yolks, honey, and molasses. Stir in the flour which has been sifted together with the salt, soda, and spices. Next add the cleaned fruit which has been dredged and the chopped nutmeats. Mix thoroughly and fold in stiffly beaten egg whites and jelly. Fill well-greased molds two-thirds full, arranging any desired decorations on top and adjust the covers tightly. Steam in a hot water bath for three hours. Then bake in a slow oven for one hour. Remove covers and allow to remain uncovered over night before storing away to ripen. Store in tightly covered containers.

A BEGINNER REPEATS

(Continued from page 650)

I managed to dirty up a large platter, a goodly portion of the sink plus a few sprinklings on the floor. However, all went well. My pride and honor were saved when they admitted that the guajillo honey was delicious.

The end of the problem of the beekeeper's wife is not in sight. My wife has agreed to raise a few colonies in competition with me next spring. She insists that she can produce—with half the effort and vocal ravings over hive and weather conditions.

I am going to purchase three colonies of Italians for her next spring. She wants to start from package bees and, at the end of the season, dump the harvest on the scale and collect the bet we made.

Somehow, though it pains to admit it, I feel that I had better get busy and do some real producing.

San Antonio, Texas.

Package Bees and Queens--Quality Bees and Service

Progeny-Test Three-Band Italians Daughters of Stock Bred for Resistance to A. F. B.

PRICES Queens

1 to 50 ..... $ .65 51 and up ..... .60

No extra charges for air mailing and clipping

GARON BEE CO., DONALDSONVILLE, LA.

Telephone 8614 Telegrams, Western Union

Now is the Time to Establish Reliable Post-War Connections

FOR SELLING

BEESWAX

When the war is over, beeswax, as well as other waxes, will again be channeled into their regular market . . . expanded, of course, by recent developments.

We are regarded as one of the important suppliers of waxes to industry. Today we want very much to buy your beeswax for cash. Furthermore, we sincerely believe that our widespread connections can be of great benefit to beekeepers and dealers who can sell wax now and who want a dependable outlet for future business. To them we offer the opportunity for immediate profit and the prospect of making a valuable customer for the years ahead.

DISTRIBUTING & TRADING CO.

444 Madison Ave. New York 22, N. Y.

Pettit's Bees and Queens

We are able to give prompt mailing of best young three-banded queens through September only.
Eighty cents each, or $1.00 Canadian money sent to M. Pettit, Georgetown, Ont., pays all charges. Write for quantity prices.
Orders for hundreds of packages already booked. Subject to standard prices to be quoted before New Years.
We shipped 50% more bees in 43 than in 42. We refused more orders than we filled. Why not book orders before all best dates are taken?

Morley Pettit
Tifton, Georgia, U. S. A.

SORRY

We are out of queens for the rest of the season. We appreciate your business very much and hope to be able to supply your needs next season.

BUY MORE WAR BONDS

The Stover Apiaries
Mayhew, Miss.

BETTER-BRED QUEENS---Three-Banded Italians

We appreciate your business in the past and solicit your future business on the merits of our service and quality. Let us quote you our 1944 prices.
CALVERT APIARIES, Calvert, Alabama

— — ATTENTION PLEASE — —

We are now booked up for April and May on both package bees and queens. Should conditions prove favorable, we hope to accept additional orders during February. Until that time no further orders will be accepted.

BESSONET BEE CO., DONALDSONVILLE, LA.

QUEENS

Italians — **Daughters of Queens Bred for Resistance** — **Caucasians**

PACKAGE BEES
Prices on Package Bees With Queens

Lots of	2-lb. Bees	3-lb. Bees	Extra Queens	
1 to 24	$3.50	$4 50	$1.25	For Tested queens double the price of untested.
25 to 99	3.35	4.35	1.15	
100 or more	3.20	4.20	1.10	

BOOKING ORDERS NOW

Over 25 year's experience shipping. Paying 43½ cents a pound for Beeswax in exchange for bees and queens. If you have over 50 pounds, write for shipping instructions. We replace any bees that die in transit if it is our fault; if it is the carrier's fault file claim with them.

Send for FREE CIRCULAR

BLUE BONNET APIARIES, Rt. 1, Box 70, Mercedes, Tex.

Photo shows portion of our queen bee yard containing over 6000 nuclei.

ITALIAN PACKAGE BEES AND QUEENS
2 lbs. with queen, $3.00; 3 lbs. with queen, $4.00.
Extra queens, $1.00 each.
After January 1st prices will advance 50c per package.
OVERBEY APIARIES, BUNKIE, LA., O. Z. Overbey, Proprietor

TALKS TO BEEKEEPERS

(Continued from page 666)

during the years. When checking the yards prior to and during the swarming season, we would take a comb with one or two cells, also adhering bees from a good colony, and place this comb in a queen mating hive, making sure that the bees had enough honey to live on. In due time, a young laying queen would appear in the hive. It was necessary to add some combs, from time to time, to make room for the expansion.

During the season when we found a queenless hive, or a failing queen, we would go to one of these mating hives and take two combs with brood, queen, and adhering bees, and place these combs in the center of the queenless hive. This method of requeening works quite well, especially during a honey flow. If a failing queen is removed from a colony when the flow is quite light, it pays to cage the queen in the nucleus being introduced to the large colony. If a rapid honey flow is on, it is unnecessary to cage the queen. We aim to have the queen between the two combs of brood given. The queen being full of eggs and laying normally is accepted, as a rule, quite readily. A queen that has been kept in a mailing cage for some time is usually small and not in laying condition until the bees have begun to feed her. That is why she has to be released by the bees from a cage.

The day before yesterday, when checking through a yard for the last time, we had occasion to use up the last of the queens kept in these queen mating hives. It is surely handy to have some queens on hand ready to use in an emergency.

MOVING BEES FOR A SECOND CROP

(Continued from page 642)

bees' filling the upper hive body of the nest with honey. But unless one wishes to winter them in a single hive body, this is no decided disadvantage. Incidentally, here's one outstanding benefit, I believe, of wintering in two hive bodies: More pollen is stored where it can be used in the spring. That matter of keeping the pollen supply where the bees intend it shall be is one I want to discuss some time with those who practice the so-called method of "reversing" hive bodies to avoid swarming.

Moving Does Not Improve the Temper of Bees

How the bees did rush out of the entrances when I removed the screens shortly after their arrival! And they were ugly (neighbors told me later) for two or three days. All the more cause for the beekeeper's placing his yards where they will not be a nuisance. Also, they didn't do much work for a time. I've read of migratory beekeepers seeing bees bring in pollen ten minutes after a stop. My bees didn't. Maybe bees can be conditioned to the experience of moving.

Did my bees make any surplus in their new location? Yes, and I sold it. But it wasn't all clear profit. Ask the migratory beekeeper if you want confirmation of this. After all, I didn't move my bees just for the possible profit entailed. I moved them to see if I could do it and to observe what would happen. I didn't learn it all, but it was an interesting experience.

Saugerties, N. Y.

Wanted Amber Extracted Honey
Send Samples and best price Frt. Paid to Cincinnati, O.
THE FRED. W. MUTH CO.

The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information from Producing Areas
CALIFORNIA POINTS:
(Period September 8-23)

Southern California. Temperatures in southern California were generally above normal during the latter half of September, with some cloudiness. In the mountains there is practically nothing for bees to work on; in the valley some pollen and a little nectar is being obtained from cover crop mustard, rabbit brush, and blue curls. Eucalyptus (glue gum) is just beginning to bloom. Demand for honey continues to exceed the supply. The baking trade is using a little less honey than previously because of increased sugar quotas. Sales f.o.b. shipping point ton lots or more—Southern California Buckwheat, Orange, and Mixed Flowers $14.40 per case of 120 pounds. Offerings of beeswax have shown some increase, with sales at the ceiling of 41½c per lb. cash, and 43½c per lb. in trade f.o.b. to beekeepers.

Central California. Weather conditions have been favorable over most of central California. Late harvesting of grain crops made the blue curls bloom a little later than usual. Stands of blue curls are very spotted, being very good in some locations but very light in others. Bees are still working cotton, blue curls, Jack clover, tarweed, and in some sections late alfalfa. Colonies will generally be in good condition for winter with ample pollen and honey for stores. Probably around 75 percent of the colonies have this year's queens. Demand for honey continues heavy, especially from retailers. Buyers and bottlers are having some difficulty in getting truck delivery from interior valley points, especially in small lots. Some bottlers are rationing honey with little choice as to color or flavor. Some are bottling only blends. Sales f.o.b. shipping point, in case lots or more—Alfalfa, Blue Curls, Buckwheat, Carrot. Clover, Orange mixture, and Mixed Flowers 12c per lb. A little more beeswax is moving at the ceiling of 41½c per lb., f.o.b. to beekeepers.

Northern California. In most sections of northern California colonies are in fairly good condition and well supplied with stores and brood. In some sections there are a large number of queenless colonies. In the tomato producing areas arsenical poisoning from tomato dusting has severely reduced or killed out colonies. Fall honey plants are generally normal in abundance, but the flow has been short because of an abnormally cool season. Star thistle has dried up in the non-irrigated sections but is still producing in irrigated districts. Blue curls are normal in some areas while others are much below normal. Some nectar is still being obtained from alfalfa, spikeweed, tarweed, and morning glory, in addition to blue curls and other star thistle. Oak honeydew has been quite plentiful. Demand for honey has been heavy. Extracting has been retarded by lack of labor in some sections. Sales f.o.b. shipping point, per lb. in case lots or more—Clover, Thistle, and Mixed Flowers 12c per lb.

PACIFIC NORTHWEST: (Period Sept. 8-23)

West of Cascades. The honey season is about over. In most of the fireweed areas yields were very light, probably averaging not much over 20 pounds per colony, although many individual colonies produced much more in favorable locations. The condition of colonies is generally good, with strong populations and considerable brood. In most cases winter stores appear ample. Demand for honey has been good from local retailers and consumers. Sales f.o.b. per lb. extracted, Clover-Vetch in case to ton lots 12c; Mixed Flowers in small pails

JUST NEWS

The Southern Beekeepers' Federation convention will be held at the Andrew Jackson Hotel, Nashville, Tennessee, November 17 and 18.—J. M. Allison, Secretary.

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn

BUY U. S. WAR BONDS AND STAMPS

Wanted White Extracted Honey
Send Sample and best price Frt. Paid to Cincinnati, O.
THE FRED. W. MUTH CO.

HONEY WANTED
Highest ceiling prices paid in CASH. Sell us your Honey for use under the AIRLINE label, famous for years. Write at once giving quantity, price, etc. WE FURNISH THE CANS. If you care to wire or telephone, do so at our expense.
MAX AMS, INC., 376 Greenwich St., New York, N. Y.

19c; bulk to consumers in buyers' containers 15c.

East of Cascades. Little honey has been gathered during this period. Third cutting alfalfa bloomed a little later than normally. Other fall flowers have bloomed fairly well, but cool weather has prevented bees from working much of the time. In general colonies are in fairly good condition, with ample stores. Local demand continues heavy. There has been some shortage of containers for use by beekeepers in this section. This has been especially true of 60s and small glass jars. Sales f.o.b.—Clover-Alfalfa, in single 60s 15c, in small pails 19-21c. Beeswax, 41½c per lb. f.o.b. to beekeepers.

SUMMARY

The main honey flow is now over in all sections of the country. About all that is left for bees will be a little from fall flowers for pasturage and to help out for winter stores. Cool weather in the more northern states has stopped practically all activity among bees. In the southern portion of the North Central States, the South Atlantic States, and fairly well into the South, goldenrod and asters are producing fairly well where weather conditions permit extended activity on the part of bees. In the Southeast fall flowers are coming along nicely, especially in Georgia and Florida, and should produce ample winter stores. Extracting in the northern States is fairly well completed and indications are that the crop as a whole will be somewhat short of normal, although in some States it may be heavier than last year. Labor shortages continue to delay extracting operations and preparation for winter in all sections. For the country as a whole bees are in much better condition for winter than last year, with generally good populations and a good supply of brood. Winter stores are also ample except in some individual cases where the main crop was extracted too closely. Demand continues heavy both on the part of large wholesalers and packers, and local retailers and consumers. In many heavy producing sections of the country a large proportion of the crop has been sold locally. In general the quality of the crop is reported as good. In some portions of the Plains Area and North Central States the honey has a little lighter body than normal, while a large portion of the crop in the Intermountain Area is darker than usual.

The 1943 honey crop in Canada is tentatively estimated by the Dominion Bureau of Statistics at 32.5 million pounds.

Monthly Report of Honey Producers

Early in October we sent the following questions to the honey producers: 1. What is the final average yield per colony to date this season in your locality of (a) extracted honey? (b) comb honey? Give answer in pounds. 2. How does this compare with the average yield for your locality? Give answer in per cent. 3. At what price has honey been sold or contracted for, if any in large lots (carload or less) in your locality, during the past month, for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 4. What are prices when sold to grocers in case lots of (a) extracted in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, fancy and No. 1, per case? 5. What is the retail price to consumers in your locality for (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) Comb honey, fancy and No. 1, per section? 6. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 7. What is the condition of the colonies for winter in your locality compared with normal considering the number and age of bees and the supply of stores? Give answer in per cent. The answers received are tabulated as follows:

Oct. Date Rec.	State. Name.	1. Final Aver. yield. Ex.	Comb.	2. Com-par-ison.	3. Carload lots. Ex.	Comb.	4. To grocers. Ex.	Comb.	5. To consumers. Ex.	Comb.	6. Move-ment.	7. Cond. of colo.
14	S-Ala. (J. C. Dickman)	40		75							Fair	100
12	B. C. (A. W. Finlay)	48.8									Rapid	60
11	S-Calif. (L. L. Andrews)	100	0	150						.30	Rapid	100
11	S-Calif. (Geo. Larinan)	100		150							Rapid	100
11	SE-Colo. (Otis E. Adcock)	75		150						.30	Rapid	100
6	E-Conn. (Allen Latham)	80		150			6.00			.33	Rapid	150
9	S-Fla. (C. C. Cook)	50		100							Rapid	125
9	C-Fla. (Harry Hewitt)	125		200							Fair	100
8	SE-Ga. (J. J. Wilder)	12	18	80							Rapid	100
11	NC-Ills. (A. L. Kildow)	35	5	25			4.00			.25	Rapid	100
7	NC-Ind. (T. C. Johnson)	65	25	75						.28	Rapid	100
7	NW-Ind. (E. S. Miller)	50	30	75						.30	Rapid	100
9	W-Iowa (E. G. Brown)	25	0	20							Rapid	100
8	C-Md. (S. G. Crocker)	25	20	50			6.00			.30	Fair	75
15	N-Mich. (Ira D. Bartlett)	60		50							Rapid	75
8	E-Mich. (L. S. Griggs)	65	30	35							Rapid	70
13	W-Minn. (B.L.Morehouse)	95		90							Rapid	100
11	W-Nev. (Geo. G. Schweis)	30	15	30						.28	Fair	100
14	W-N. M. (C. A. Baltzley)	140		115						.45	Fair	100
13	NW-N. Y. (Geo. B. Howe)	50		45						.35	Fair	100
6	C-N. Y. (F. W. Lesser)	60	20	60							Rapid	125
9	NW-N. C. (C.S.Baumgarner	0	0	0								50
10	C-Ohio (R. D. Hiatt)			38							Rapid	115
11	NC-Okla. (C. F. Stiles)	30	0	90							Rapid	90
7	C-Pa. (Harry Beaver)	110		110							Rapid	100
7	SE-Pa. (D. C. Gilham)	20	10	50			5.40			.32	Fair	80
7	W-S. C. (E. S. Prevost)	15	10	40							Rapid	80
11	C-Texas (T. A. Bowden)	40		70							Fair	100
8	S-Texas (C. G. Mayes)	75		80							Rapid	80
11	S-Texas (H. B. Parks)	50		98							Rapid	100
11	W-Utah (Wm. Moran)	40		60								90
11	N-Wyo. (Earl C. Reed)	90	40	75			6.00			.35	Fair	90

THE LOTZ SECTION

Prices on Request

Now is the Time

to

anticipate your bee supply needs

for

1944

• • •

August Lotz Company

Manufacturers of Bee Supplies

BOYD, WISCONSIN

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S Economy Foundation

Not excelled for quality, strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons

Rt. 4 Bay City, Mich.

ARE YOU KEEPING UP . . .

with the latest developments in your field? Here's a group of magazines that specialize in a particular subject! You'll be interested in at least one of these magazines. . and you have the assurance that the articles are written by people who know. Send your subscription today!

Bee Magazines
- Gleanings in Bee Culture, $1. per year
- Beekeepers' Item, $1.
- American Bee Journal, $1.
- Beekeepers Magazine, $1.

Dairying
- Dairy Farmers Digest, $1.
- Dairyman's Journal, 35c
- Dairyland News, s. m., 50c

Farming
- American Farm Youth, 75c
- Fletcher's Farming, 50c

Fruit
- Better Fruit, m., $1.
- Eastern Fruit Grower, $1.

Goats
- American Dairy Goat News, $1.
- Goat World, $2. (6 months, $1.)

Livestock
- The Cattleman, $1.
- American Cattle Producer, $1.
- Florida Cattleman, $1.
- National Live Stock Producer, 50c
- Texas Live Stock Journal, $1.
- Eastern Breeder, $2. (8 months $1.)
- Pacific Stockman, $1.
- The Sheepman, $1.
- New Mexico Stockman, $1.
- Hoofs & Horns (rodeos, west) **$1.50**

Horses
- The Chronicle, weekly, breeding, fox hunting, racing, horse shows, $5.
- National (Saddle) Horseman, $5.
- The Horse, bi - monthly, breeding, schooling, training, horse sports, $5.
- Saddle and Bridle, m., $4.
- NRA Round-Up, m., (rodoes), 50c

Pigeons
- American Pigeon Journal, Squabfancy, $1.50
- Pigeon News, fancy only, $1.50

Poultry
- Cackle & Crow, the Poultrypaper, $1.
- Pacific Poultryman, 50c
- Bantam Magazine, $1.
- Northeastern Poultryman, 24 issues, 2 years, $1.

Rabbits
- Small Stock, (rabbits, cavies exclusively) $1.
- American Rabbit Journal, $1.
- American Sm., Stock Farmer (rabbits only), 50c

Other Specialties
- The Soybean Digest, $1.50
- New Agriculture (sugar beets only) $2.
- American Fur Breeder, (mink, etc.) $1.
- Small Commercial Animals & Fowls, 50c
- Co-operative (Farmers) Digest, $2.
- Southern Sportsman, Q., 12 issues, $1.50

All magazines are monthlies unless otherwise noted; prices are for one full year. Satisfaction guaranteed. All orders are handled promptly and acknowledged. Rush your subscriptions today. Remit in any way convenient to you.

MAGAZINE MART

Dept. GB P. O. Box 1288, Atlanta, 1, Ga.

Sample copies at single copy prices.

FOR SATISFACTION BUY ROOT QUALITY

Write us for prices on quantity lots, and our new prices for working beeswax into AIRCO COMB FOUNDATION, also special fall prices on hives.

U. S. Government Wants More Spreads for Bread------

Plan now to produce more COMB HONEY for 1944.
COMB HONEY prices are HIGH and may be HIGHER.
BEEKEEPERS! Plan now for your 1943 and 1944 feeding. The most practical low-price feeder is the Division-board Feeder. We have a large stock. Get them now, and have them nailed up ahead of time.
INEXPENSIVE PACKING PAPER. 500 ft. roll, $1.25.
"USE IT TWICE" BRAND PACKING PAPER. 500 ft. roll, $1.95.

SELL FOR CASH

Collect freight to our door for your White and Amber Extracted Honey, at ceiling prices. Buying all grades capping-melter honey, best grades at 11½c per lb.
Collect freight to our door for all beeswax over 100 lbs.
If you want 50 or 100 cases of Glass Honey Jars, write us for our quantity lot prices.

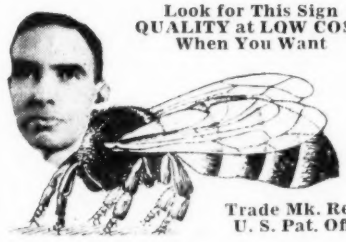
NEW ECONOMY LINE GLASS HONEY JARS

8 oz., 16 oz., and 2½ lb. sizes; 5 lb. with Mason size caps. Packed 6 to carton.

M. J. BECK

SUCCESSOR TO M. H. HUNT & SON.

Lansing 1, Mich. Box 7 510 N. Cedar St.



Look for This Sign
QUALITY at LOW COST
When You Want

Trade Mk. Reg. U. S. Pat. Off.

KELLEY—"The Bee Man"

Glass - Tin

16 oz. Economy Jars, carton 24 each,	$0.70
32 oz. Economy Jars, carton 12 each,	.42
5 lb. Economy Jars, 12 cartons	5.00
24 cartons	9.95
60 lb. Square tin cans, carton of 16	5.40

Quick shipment from large Paducah stock.

If You Have CASH

Right now is the time for you to purchase your bee hives for 1944. We have on hand a nice stock of wooden goods and make prompt shipment of your orders.

THE WALTER T. KELLEY CO.

Paducah, Kentucky

CONTENTS

November, 1943

Moving Bees for a Second Crop—Grant D. Morse, Ph. D.	641 - 642
Temperature and Food Consumption of Wintering Bees —Annie D. Betts	643 - 645
From an Apiarist's Note Book—A. H. Bowen	646 - 647
Let's Have Honey Fruit Cake—Mrs. Benj. Nielsen	648 - 649
A Beginner Repeats—Leonard O. Dansby	650
Moving Bees Unscreened—Cary W. Hartman	651
Observations of an Amateur—C. O. A. Kramer	651 - 652
Honey Going to Waste in Alberta—W. G. LeMaistre	652
One Man's Opinion	652 - 653
Cat Bird Kills Bees—L. E. Shaner	653
Second Glances—C. M. Isaacson	653 - 654
From North, East, West and South	655 - 658
Just News	659
Editorials	660 - 661
American Honey Institute News Notes	662
Asked and Answered	665
Spinster Jane Says	664 - 665
1943 Honey Crop in Canada	665
New Jersey Association Sponsors Radio Program —S. H. Wilcox	665

Subscription Rates—United States, one year, $1.00; two years for $1.50; three years for $2.00. Single copy, 10 cents. Other countries, 25c per year additional for postage. Discontinuance—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of address—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by postoffice money order, bank draft, express money order or check. Contribution to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class mail matter at the Postoffice at Medina, Ohio, Published monthly.

The A. I. Root Company, Publishers, Medina, Ohio

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.